

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



























Reserve  
aSB249  
..P5

2457 [ STATISTICAL ANALYSIS OF COTTON BALE WEIGHTS ] #C

By John Pierre-Benoist, Agricultural Economist  
Agricultural Marketing Service, USDA

and

Hedy Strachman, Mathematical Statistician  
Agricultural Marketing Service, USDA

March 1981





## TABLE OF CONTENTS

<u>Heading</u>	<u>Page</u>
Part I - General Observations	
Introduction	I-I
Results	I-2
Averages & Variations	I-5
Part II - Details of the Analysis	
Observations	II-1
Details of Statistical Analysis	II-2
i) Test of Null Hypothesis	
ii) Determination of Differences in Variances	
iii) Determination of Differences in Means	
Part III - Appendices	
A Printouts	
B Histograms and Frequency Tables	





Number of

Percentage

...

...

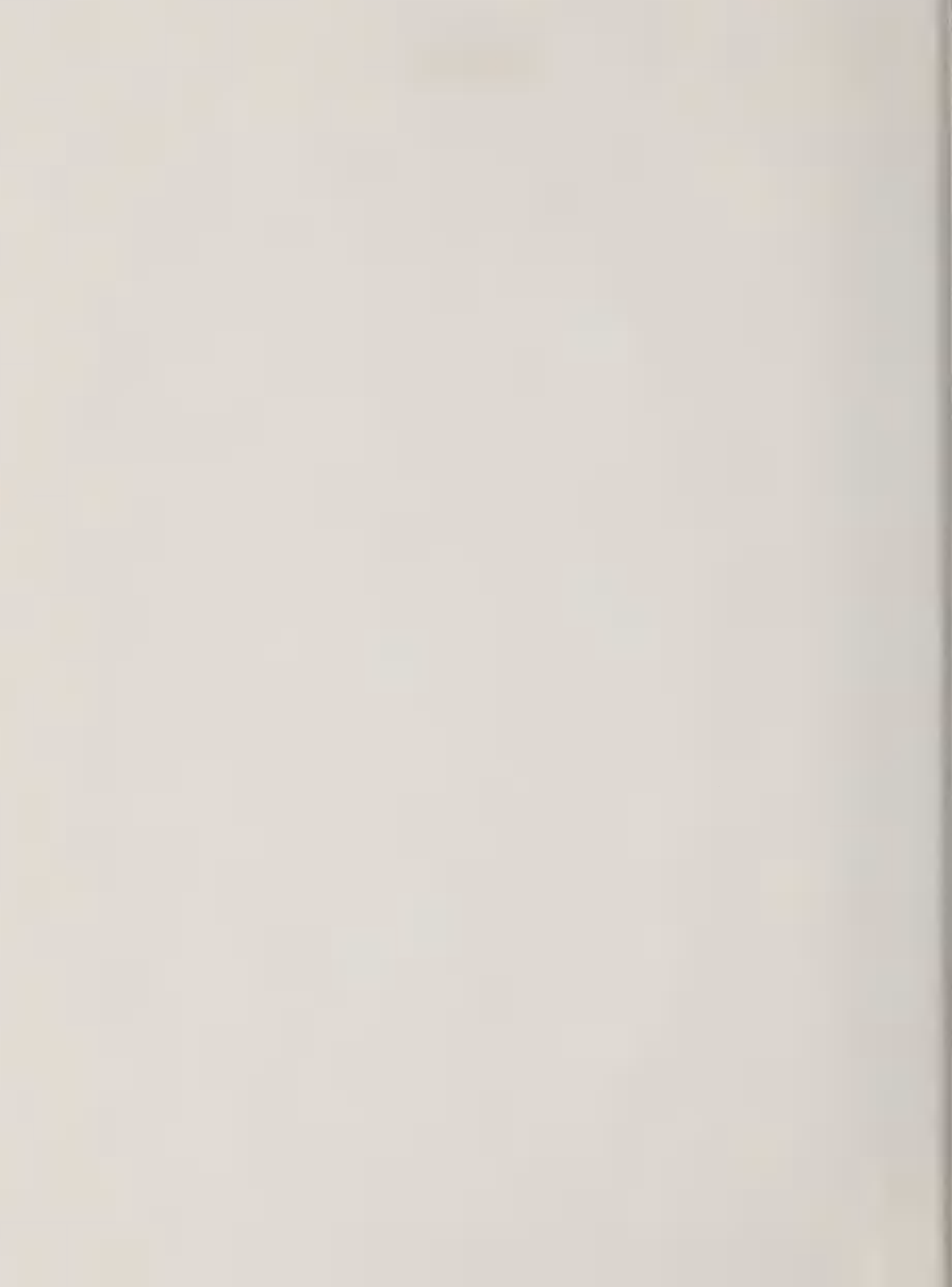
...

...

...

## PART 1: General Observations





Figures & Tables  
in Text 1/

	<u>Page</u>
Table 1 : Number of Bales .....	I-2
Table 2 : Percentage of Bales Between 460 and 539 lbs .....	I-2
Table 3 : Frequency Distribution .....	I-3
Table 4 : Average Bale Weights .....	I-6
Table 5 : CV's .....	I-6
Table 6 : Simultaneous Test On State Means .....	II-6
Table 7 : Relationships Between States .....	II-3
Figure 1 : Percentage Bar Chart .....	I-4
Figure 2 : CV's .....	I-5

1/ Appendix tables not listed separately





## Introduction

Various participants in the cotton industry have requested that the Cotton Division of the USDA Agricultural Marketing Service analyze the latest available data on cotton bale weights. This study is a response to those informal requests.

The bale weights utilized in the study come from the annual "Ginning Charges and Related Data" survey. Unfortunately not all gins charge by bale weights. The result is that only seven states are represented within the sample. Although two principal producers, California and Mississippi, are not represented, it is felt that the sample is adequate for drawing valid conclusions. There are 14,229 bales in the sample. Three crop years, 1977 to 1979, are covered. The area represented produced some 60% of U.S. Upland cotton in 1978. It should be noted that the data available from Texas was so disproportionately large that a sample was drawn from the Texas sample. Table 1 gives the sample sizes for each state, and for each year.





State	No. of Bales in Sample	Crop Years			Total	% of U.S. Production State Accounted for in 1978
		1977	1978	1979		
Arkansas		322	32	695	1049	6%
Arizona		1053	1053	181	2287	10%
Louisiana		126	366	138	630	4%
Missouri		350	184	426	960	2%
New Mexico		744	330	627	1701	1%
Oklahoma		1451	1773	1700	4924	3%
Texas		861	782	1053	2678	35%
Total		4907	4520	4802	14229	61%

Table 1. Number of bales sampled by state and year

Results

The full three year sample reflected a high degree of normality. The mean, median, and mode were 499 lbs., 501 lbs., and 500 lbs. respectively. (see Table A1- Appendix A). This is quite close considering that the range from the lightest to the heaviest was 424 lbs. The lightest bales weighed in at a bit more than 300 lbs. and the heaviest bales went from about 650 lbs. to a high of 724 lbs.

Over the three year period, the vast majority of the bales were between 460 lbs. and 539 lbs. Table 2 indicates to what degree.

% in 460 to 539 lbs. range (rounded)

Arkansas	68
Arizona	72
Louisiana	65
Missouri	71
New Mexico	76
Oklahoma	78
Texas	84
All Seven States	76

Table 2. Percentage of bales between 460 and 539 lbs. for the 7 states

Assuming a relatively normal distribution of bale weights for the combined states, the above table implies that roughly 12% of the bales would be less than 460 lbs. and 12% more than 539 lbs. and 8% would be lower than 460 lbs.



Table 3 below presents a frequency distribution of the bale weights analyzed. The histogram in figure 1 gives a good appreciation for the nature of the distribution.

Table 3. Frequency distribution of bale weights for the 7 states

STATES								
Weight Intervals	All Seven States	Arkansas	Arizona	Louisiana	Missouri	N. Mexico	Oklahoma	Texas
350 & Below	0.2	0.4	0.2	0.6	0.2	0.1	0.2	0
350-359	0.1	0.2	0.2	0.5	0.1	#	#	#
360-369	0.2	0.4	0.3	0.8	0.3	0.6	0.1	0
370-379	0.2	0.5	0.2	0.5	0.2	0.6	0.1	0
380-389	0.3	0.8	0.4	0.8	0.6	0.2	0.2	0.2
390-399	0.4	0.7	0.7	0.3	0.5	0.2	0.3	0.1
400-409	0.8	1.7	0.9	2.5	0.7	0.4	0.6	0.6
410-419	1.1	1.7	0.8	2.7	1.7	0.6	1.0	0.9
420-429	1.7	2.3	1.6	4.0	1.9	1.5	1.7	0.9
430-439	1.5	3.0	1.7	2.1	1.9	1.9	1.1	0.9
440-449	2.6	4.7	2.4	3.3	3.2	2.2	2.3	2.5
450-459	3.5	5.2	3.2	3.7	5.8	3.7	2.7	3.5
460-469	5.1	7.3	3.9	4.9	7.4	4.9	3.8	7.0
470-479	6.6	9.2	5.4	6.7	8.8	6.2	5.8	7.7
480-489	9.1	10.5	6.7	9.5	8.0	9.3	9.2	10.9
490-499	11.1	10.7	9.5	8.1	10.4	11.0	11.8	12.4
500-509	13.4	10.2	12.1	14.3	12.3	14.8	13.1	15.4
510-519	12.2	8.5	12.8	11.1	10.5	12.2	12.7	13.1
520-529	10.9	6.6	12.3	6.4	7.3	9.1	12.9	11.0
530-539	7.8	5.0	9.1	3.7	5.9	8.3	9.0	6.6
540-549	4.6	2.8	5.3	3.3	4.0	5.7	5.1	3.4
550-559	2.8	4.0	3.6	2.4	3.2	3.0	2.7	1.4
560-569	1.8	1.1	2.5	3.0	2.0	2.4	1.8	0.5
570-579	1.1	0.5	2.0	2.5	1.4	0.9	0.9	0.4
580-589	0.6	0.6	1.3	1.0	0.5	0.6	0.5	0.1
590-599	0.3	0.7	0.5	0.3	0.4	0.5	0.1	0.2
600 & Over	0.4	1.1	0.7	1.1	0.7	0.3	0	0.2
Totals*	100%	100%	100%	100%	100%	100%	100%	100%

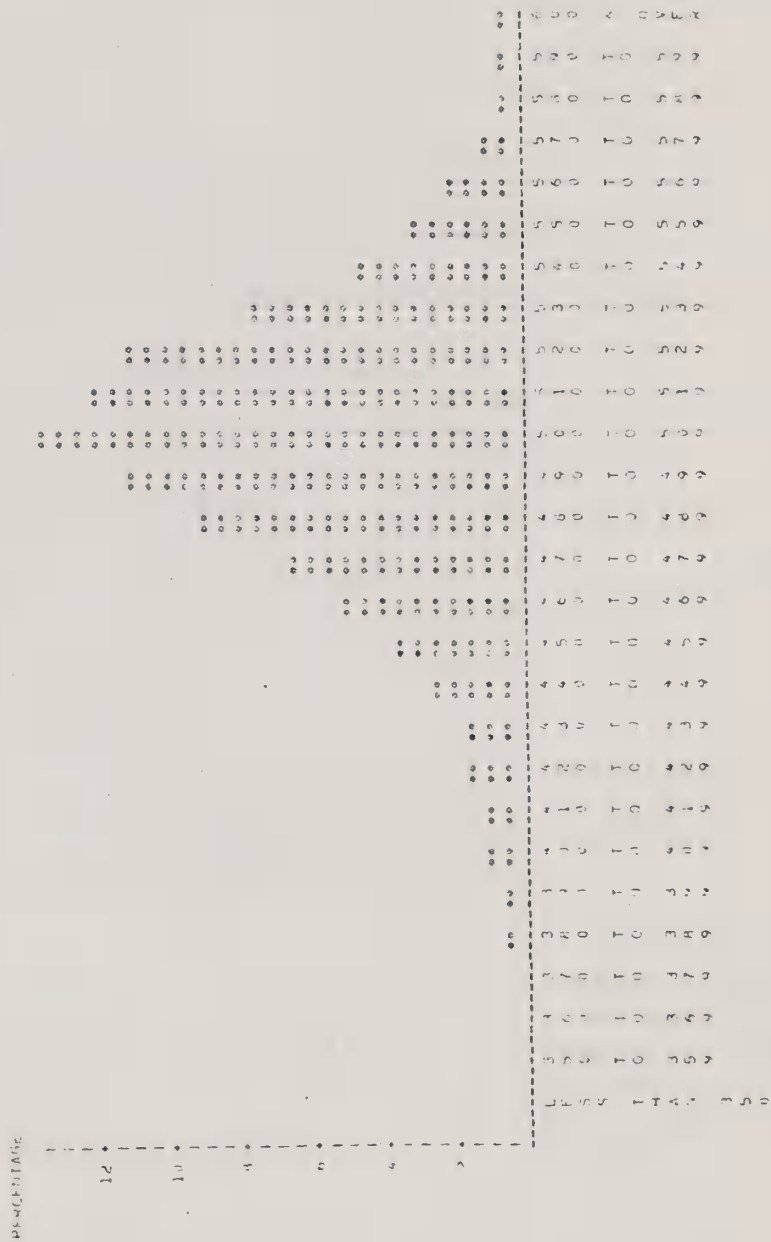
(note: # less than 0.1%

\* may not sum to 100% due to rounding





Figure 1. Cotton half bolls for 1971-1980 for all states



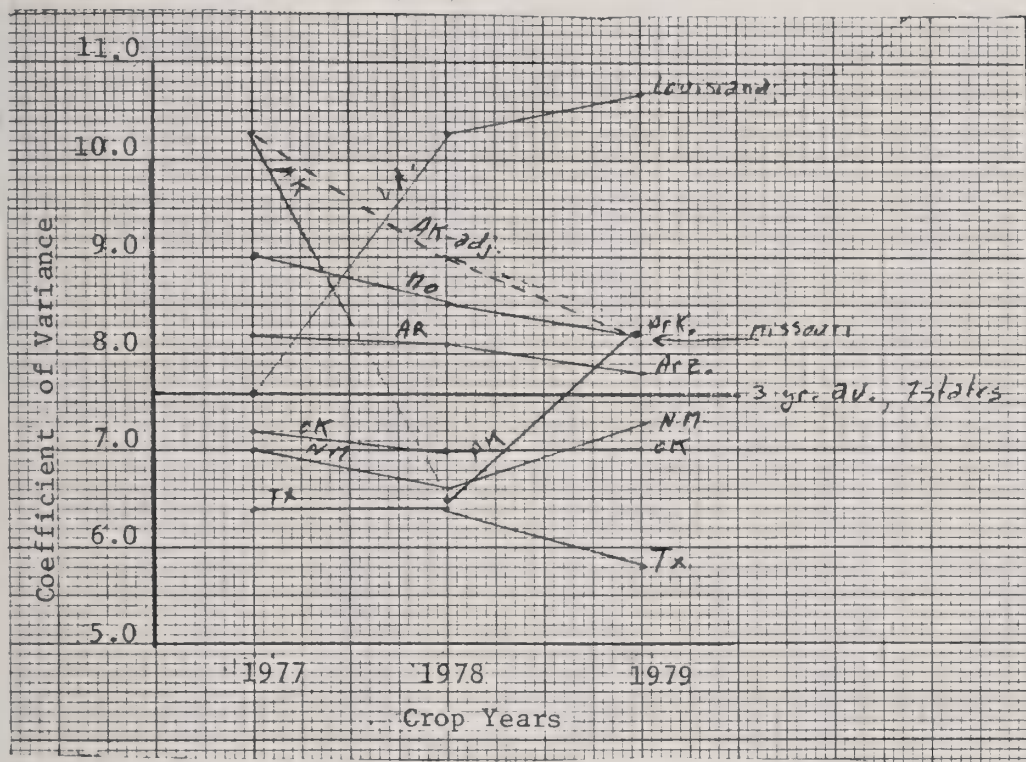




### Averages and Variations

The averages for the bale weights were quite close. However, except for Oklahoma and New Mexico, the samples tested out to be from different statistical populations, and tests showed that they did not all come from one national population.\* Figure 2 shows to what degree there were variations, based on examination of the coefficients of variance.

Figure 2. CV's for the 7 states over 3 years



A coefficient of variance (or CV) is really no more than the percentage of the mean value which the standard deviation represents. A positive situation is one with a low CV, i.e., where the standard deviation is low. It will be noted that the Arkansas CV for the 1978 period was adjusted upwards: this was based on intuition and an appreciation that the 1978 sample was quite small and may have come from no more than a couple of gins. Tables 4 and 5 provide the average bale weights and the CV's.

\* For more detail, please see Part II, and the Appendices.



Table 4. Average Bale Weights by State and Crop Year

State	Crop Years			Weighted Average
	1977	1978	1979	
Arkansas	496	451	487	488
Arizona	505	506	486	504
Louisiana	491	483	501	489
Missouri	491	500	495	495
New Mexico	504	507	497	502
Oklahoma	494	506	500	501
Texas	496	488	502	496
Average All States	498	500	497	499

Table 5. Coefficients of Variance

(S.D./Mean = C.V.)

States	Crop Years			3 Year Average
	1977	1978	1979	
Arkansas	10.3	6.5	8.2	9.0
Arizona	8.2	8.1	7.8	8.2
Louisiana	7.6	10.3	10.7	10.0
Missouri	9.0	8.5	8.2	8.6
New Mexico	7.0	6.6	7.3	7.1
Oklahoma	7.2	7.0	7.0	7.1
Texas	6.4	6.4	5.8	6.3
Seven States	7.7	7.7	7.3	7.6





Inspection of Figure 2 and Table 5 readily shows that Arkansas and Louisiana have both the highest fluctuating and the highest CV's. Texas exhibits the greatest degree of constancy. Missouri and Arizona have somewhat similar patterns, and Oklahoma and New Mexico have the closest relationship.

Although it is not known why Oklahoma and New Mexico have such statistical and visual similarities, and the data provides no basis for drawing any hypotheses as to the reasons, it is suspected that they have ginning equipment and field-to-gin transport similarities. The basis for that is that the weight of a bale of cotton is not directly related to farm size or to type of cotton, but rather to the type of press being used; and that the variance in bale weights is closely related to the rate at which cotton is fed into the gin, e.g., from modules or trailers. A determination of the reasons for the similarities is outside the scope of this paper. However, establishing the reasons would be a valid subject for another study.



PART II: details of the analysis





Observations

At first blush the data seemed to break out into three conceptual, i.e., "eyeballed," groups. The tests which follow were performed on the basis of this initial breakdown.

<u>group</u>	<u>states</u>	<u>means</u>
A	Arkansas	488 lbs.
	Louisiana	489 lbs.
B	Oklahoma	501 lbs.
	New Mexico	502 lbs.
	Arizona	504 lbs.
C	Missouri	495 lbs.
	Texas	496 lbs.

Although these differences appear to be minor, statistically there seem to be important differences between the variances and ranges of weights for different years and states (see Tables AII and AIII). This suggests that the distributions of bale weights for the 7 states may not all be the same.

Subsequent test procedures revealed that:

1. All samples do not appear to come from the same general population.
2. Only New Mexico and Oklahoma have statistically like means and variances. Assuming that the distribution of bale weights is normal for New Mexico and Oklahoma, the samples from these two states may be said to come from the same population.

However, what differences there were in the variances were not that great, and on a purely pragmatic basis may be considered to be quite similar (over time, not in any one year).



Details of Statistical Analysisi) Test of the null hypothesis that the population mean bale weight is the same for all seven states:

This test calls for an analysis of variance (ANOVA) procedure. Since this procedure assumes equal variances of bale weights for the seven states, Bartlett's test for equality of variances was first employed. Bartlett's test indicated that the variances for the seven states are not equivalent ( $X^2=434.25, df=6, p=.0001$ ). Consequently, a regular ANOVA procedure was not used. Each observation within a particular state was divided by the standard deviation for that state and an ANOVA was run on these modified observations. Although an exact F statistic no longer results with this modification, the statistic was assumed to have approximately an F distribution. The outcome of the test indicated that the means for the seven states are not equivalent to some overall mean ( $F=6320.63, df=6, p=.0001$ ).

ii) Determination of differences in variances of bale weights for the seven states:

Bartlett's test in part (i) revealed that the variances for the seven states are not equivalent. Consequently, simultaneous tests were desired in order to discover which variances are not equivalent. However, the sample sizes are so large that it is virtually impossible not to reject the null hypothesis:  $\sigma_i^2 = \sigma_j^2$  (where  $\sigma_i^2$  and  $\sigma_j^2$  are population variances from 2 different states) except when the two sample standard deviations are equal. Oklahoma and New Mexico are the only two states having standard deviations close enough to be considered equal. Their ratio is approximately 1.0004.

Although the other pairs of variances may be considered statistically different, they do not appear to be too divergent in a purely practical sense.

iii) Determination of differences in means of bale weights for the seven states

Having rejected the null hypothesis that the states' population mean bale weights are equivalent to an overall mean, interest turned to determining which means are statistically dissimilar. Simultaneous comparisons based on the three aforementioned "eyeballed" groups were formed.

Table 6, below, shows the five comparisons made and their degrees of freedom. Since the degrees of freedom involved are so large, these t-values may be compared to a tabled z-value (the standard normal distribution). In order to have an overall significance level less than or equal to 0.05 (i.e., we have at most a 5% probability of rejecting the null hypothesis given it is true), 1% significance levels must be used for each individual comparison. Since  $z_{.005} = 2.575$  and only the t-value for comparing Oklahoma and Arizona is greater than 2.575, the conclusion is that, of the five pairs of



states, only Oklahoma and Arizona have statistically different means. The same conclusion would result for an overall significance level of 0.01; 0.2% significance levels must be used for each individual comparison, and each t-value is compared to  $z.001 = 3.08$ .

Table 6. Simultaneous comparisons of means for 5 pairs of states

<u>Comparison</u>	<u>/ t-value /</u>	<u>df</u>
Arizona & New Mexico <u>2/</u>	1.3592	3900.9
New Mexico & Oklahoma <u>1/</u>	1.4935	6623
Missouri & Texas <u>2/</u>	.7398	1351.7
Arkansas & Louisiana <u>2/</u>	.0963	1220.6
Arizona & Oklahoma <u>2/</u>	3.1507 <u>3/</u>	3931.2

1/ Computations were done under the assumption that the variances for the two states are equal (see page II-2, item ii).

2/ Computations were done under the assumption that the variances for the two states are not equal; an approximate t-statistic is given, as well as Satterthwaite's approximation for degrees of freedom (see page II-2 item ii).

3/ Significant at the 1% and at the 5% levels.

On the basis of the preceding statistical results, the three groups referred to should be modified. Only New Mexico and Oklahoma form a real group. Assuming the distribution of bale weights is normal for New Mexico and Oklahoma, the samples from these two states may be said to come from the same population. Inspection of the histograms for these states (see Appendix B) suggests that the distributions do appear to be normal.

The following table summarizes the ascertained relationships:

Table 7. Ascertained relationships, means & variances

<u>State</u>	<u>State with same mean</u>	<u>Also same variance</u>
Arizona	New Mexico	no
Arkansas	Louisiana	no
Missouri	Texas	no
Oklahoma	New Mexico	yes

Table A-IV in the Appendix provides the data on a per annum basis, for each state. Detailed tables, and histograms are to be found in Appendix B.





Part III: Appendices



## Appendix A





NOTE: in the print-outs the following abbreviations were employed

AR	Arizona
LA	Louisiana
MO	Missouri
NM	New Mexico
OK	Oklahoma
TX	Texas
CUM	cumulative
FREQ	frequency
N	number of items in a sample
STD	standard



Table A1

Statistics for entire sample of 7 states

sample size	14229
mean	498.602
standard deviation	37.8526
skewness	- .619771
CV	7.59175
maximum	724
minimum	300
upper quartile	520
median	501
lower quartile	480
mode	500

Extremes

Lowest	Highest
300	644
300	650
305	664
310	702
310	724



TABLE A-11

STATISTICS BY YEAR  
1977 to 1978

VARIABLE	N	MEAN	STANDARD DEVIATION	VARIANCE	MINIMUM VALUE	MAXIMUM VALUE	RANGE	STD ERROR OF MEAN	SKEWNESS
LBS	4907	498.05726513	38.34341495	1470.21747014	300.00000000	664.00000000	364.00000000	0.54737223	-0.57675985
				YEAR=1978-79					
LBS	4520	500.43938053	39.77119916	1503.20588410	305.00000000	724.00000000	419.00000000	0.57668681	-0.72224662
				YEAR=1979-80					
LBS	4802	497.43044565	36.38817679	1324.09941030	300.00000000	702.00000000	402.00000000	0.52510871	-0.57051082





TABLE A-111

## STATISTICS BY STATE.

VARIABLE	N	MEAN	STANDARD DEVIATION	VARIANCE	STATE=AK		RANGE	STD ERROR OF MEAN	SKEWNESS
					MINIMUM VALUE	MAXIMUM VALUE			
LBS	1049	448.47283127	44.10545467	1945.29148444	315.0000000	664.0000000	349.0000000	1.36177262	-0.16314213
STATE=AR									
LBS	2287	503.77831220	41.08411482	1687.90490126	300.0000000	630.0000000	330.0000000	0.85909443	-0.71340318
STATE=LA									
LBS	630	488.70158730	48.82452761	2383.83449668	305.0000000	630.0000000	325.0000000	1.94521574	-0.44862502
STATE=MO									
LBS	960	494.76979167	42.33377139	1792.14820017	325.0000000	724.0000000	399.0000000	1.36631660	-0.01723735
STATE=NM									
LBS	1701	502.12757202	35.40304492	1253.37842169	312.0000000	622.0000000	310.0000000	0.85839850	-0.39624861
STATE=OK									
LBS	4924	500.63606824	35.54474893	1263.42917617	300.0000000	600.0000000	300.0000000	0.50654313	-0.94187328
STATE=TX									
LBS	2678	495.87490665	31.24888399	976.49275074	310.0000000	650.0000000	340.0000000	0.60385022	-0.60996241



TABLE A-IV

## STATISTICS BY STATE AND YEAR

VARIABLE	N	MEAN	STANDARD DEVIATION	VARIANCE	MINIMUM VALUE	MAXIMUM VALUE	RANGE	STD ERROR OF MEAN	SKEWNESS
STATE=AK YEAR=1977-78									
LBS	322	475.35952733	51.11410511	2613.06067027	342.00000000	664.00000000	322.00000000	2.84870062	-0.34681575
STATE=AK YEAR=1978-79									
LBS	32	471.03125000	29.13315856	848.74092742	410.00000000	562.00000000	152.00000000	5.15006349	1.80649459
STATE=AK YEAR=1979-80									
LBS	695	475.72305755	39.96644131	1597.31643066	315.00000000	625.00000000	310.00000000	1.51601353	-0.21945261
STATE=AR YEAR=1977-78									
LBS	1053	504.03437797	41.15063485	1693.37474859	300.00000000	625.00000000	325.00000000	1.26812585	-0.90683612
STATE=AR YEAR=1978-79									
LBS	1053	505.94112061	40.86440090	1670.25888734	310.00000000	630.00000000	320.00000000	1.25944066	-0.65099479
STATE=AR YEAR=1979-80									
LBS	181	495.21546961	37.89463438	1436.00331492	390.00000000	591.00000000	201.00000000	2.81668599	-0.14141529
STATE=LA YEAR=1977-78									
LBS	126	490.71424571	37.37225862	1396.68571429	380.00000000	565.00000000	185.00000000	3.32938542	-1.17151460
STATE=LA YEAR=1978-79									
LBS	366	483.37431694	49.56268256	2456.45950296	305.00000000	630.00000000	325.00000000	2.59068292	-0.52365123
STATE=LA YEAR=1979-80									
LBS	134	500.90275462	53.79692776	2894.10943616	360.00000000	620.00000000	260.00000000	4.57949861	-0.17223330
STATE=MO YEAR=1977-78									
LBS	350	470.94295714	44.05329857	1940.69311502	342.00000000	598.00000000	256.00000000	2.35474786	-0.43151925



TABLE A-IV (continued)

LBS	184	500.30434743	42.43071662	1800.36546263	325.00000000	724.00000000	399.00000000	3.12803408	0.36935005
				STATE=MU	YEAR=1979-80				
LBS	425	435.49061033	40.61365932	1649.46932339	362.00000000	702.00000000	340.00000000	1.96773822	0.25193235
				STATE=MU	YEAR=1979-80				
LBS	744	504.25537634	35.28971572	1245.36403566	344.00000000	620.00000000	276.00000000	1.29378375	-0.47802225
				STATE=MU	YEAR=1977-78				
LBS	430	506.58181818	33.27477439	1107.21061067	312.00000000	622.00000000	310.00000000	1.83171604	-0.63033375
				STATE=MU	YEAR=1979-80				
LBS	627	497.25837321	36.11271279	1304.12802483	367.00000000	595.00000000	228.00000000	1.44220283	-0.19255266
				STATE=MU	YEAR=1977-78				
LBS	1451	494.34321158	35.36654449	1250.79246940	314.00000000	587.00000000	273.00000000	0.92845086	-0.63575552
				STATE=MU	YEAR=1978-79				
LBS	1773	505.98646362	35.56932692	1265.17701757	328.00000000	600.00000000	272.00000000	0.84473654	-1.14479020
				STATE=MU	YEAR=1979-80				
LBS	1700	500.42705882	34.76704429	1210.14123325	300.00000000	600.00000000	300.00000000	0.84371072	-1.07233020
				STATE=MU	YEAR=1977-78				
LBS	461	495.65156794	31.93313212	1019.72496556	360.00000000	650.00000000	290.00000000	1.08827825	-0.15167471
				STATE=MU	YEAR=1978-79				
LBS	702	437.90281330	31.41630374	986.98414060	310.00000000	603.00000000	293.00000000	1.12344473	-0.63709796
				STATE=MU	YEAR=1979-80				
LBS	1035	502.08405197	29.11704664	847.80240518	340.00000000	593.00000000	253.00000000	0.90505953	-1.07239643



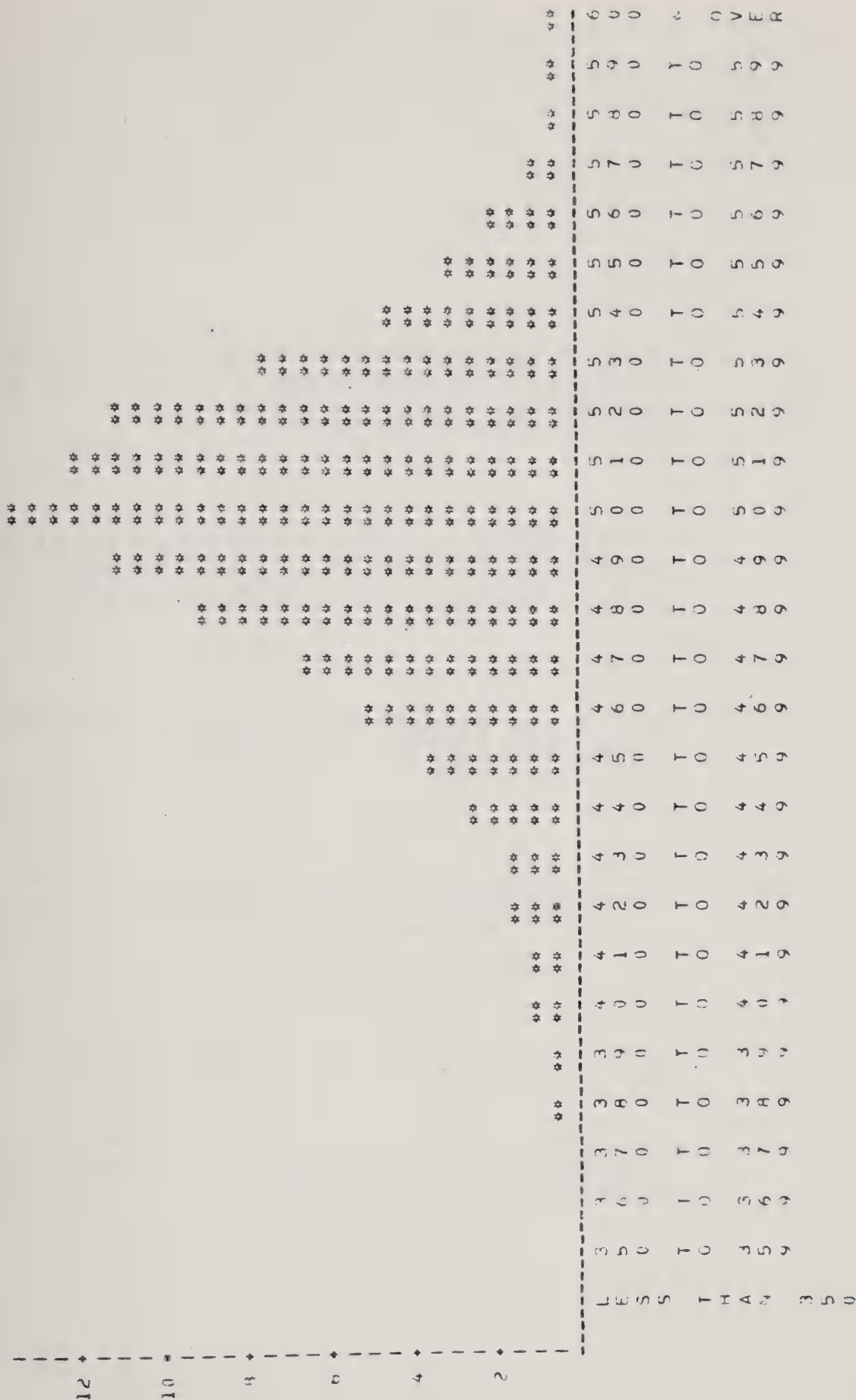


## APPENDIX B



SECTION B-1: cotton bale weights for all seven states, histograms  
and frequency tables, 1977-80, 1977/78, 1978/79, 1979/80





## LIST



## FREQUENCY OF LBS FOR 1977-80 FOR ALL 7 STATES

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	31	31	0.218	0.218
350 TO 359	16	47	0.112	0.330
360 TO 369	28	75	0.197	0.527
370 TO 379	24	99	0.169	0.696
380 TO 389	48	147	0.337	1.033
390 TO 399	51	198	0.358	1.392
400 TO 409	114	312	0.801	2.193
410 TO 419	152	464	1.068	3.261
420 TO 429	235	699	1.652	4.913
430 TO 439	210	909	1.476	6.388
440 TO 449	375	1284	2.635	9.024
450 TO 459	497	1781	3.493	12.517
460 TO 469	724	2505	5.088	17.605
470 TO 479	940	3445	6.606	24.211
480 TO 489	1301	4746	9.143	33.354
490 TO 499	1577	6323	11.083	44.437
500 TO 509	1900	8223	13.353	57.790
510 TO 519	1739	9962	12.222	70.012
520 TO 529	1544	11506	10.851	80.863
530 TO 539	1102	12608	7.745	88.608
540 TO 549	649	13257	4.561	93.169
550 TO 559	392	13649	2.755	95.924
560 TO 569	251	13900	1.764	97.688
570 TO 579	150	14050	1.054	98.742
580 TO 589	81	14131	0.569	99.311
590 TO 599	44	14175	0.309	99.620
600 & OVER	54	14229	0.380	100.000

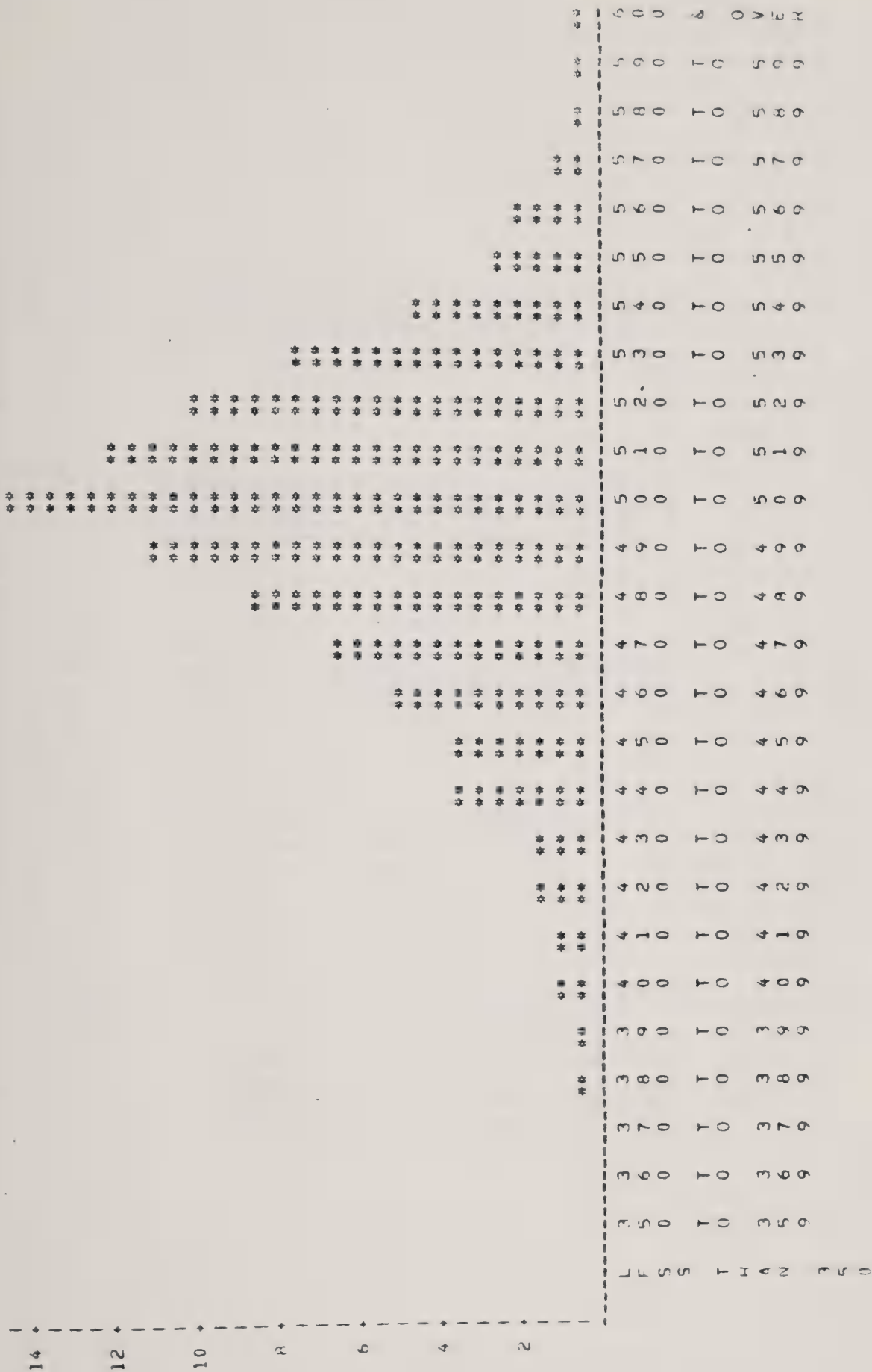




COTTON BALE WEIGHTS BY YEAR  
YEAR=1977-78

PERCENTAGE HAR CHART

PERCENTAGE



LBS



FREQUENCY OF LHS BY YEAR  
YEAR=1977-78

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	10	10	0.204	0.204
350 TO 359	6	16	0.122	0.326
360 TO 369	9	25	0.183	0.509
370 TO 379	11	36	0.224	0.734
380 TO 389	19	55	0.387	1.121
390 TO 399	16	71	0.326	1.447
400 TO 409	42	113	0.856	2.303
410 TO 419	54	167	1.100	3.403
420 TO 429	85	252	1.732	5.136
430 TO 439	80	332	1.630	6.766
440 TO 449	160	492	3.261	10.026
450 TO 459	164	656	3.342	13.369
460 TO 469	247	903	5.034	18.402
470 TO 479	329	1232	6.705	25.107
480 TO 489	422	1654	8.600	33.707
490 TO 499	545	2199	11.107	44.814
500 TO 509	708	2907	14.428	59.242
510 TO 519	600	3507	12.227	71.469
520 TO 529	486	3993	9.904	81.374
530 TO 539	358	4351	7.296	88.669
540 TO 549	210	4561	4.280	92.949
550 TO 559	132	4693	2.690	95.639
560 TO 569	93	4786	1.895	97.534
570 TO 579	53	4839	1.080	98.614
580 TO 589	33	4872	0.673	99.287
590 TO 599	18	4890	0.367	99.654
600 & OVER	17	4907	0.346	100.000







FREQUENCY OF LBS BY YEAR  
YEAR=1978-79

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	12	12	0.265	0.265
350 TO 359	8	20	0.177	0.442
360 TO 369	12	32	0.265	0.708
370 TO 379	6	38	0.133	0.841
380 TO 389	13	51	0.288	1.128
390 TO 399	14	65	0.310	1.438
400 TO 409	37	102	0.819	2.257
410 TO 419	51	153	1.128	3.385
420 TO 429	80	233	1.770	5.155
430 TO 439	59	292	1.305	6.460
440 TO 449	104	396	2.301	8.761
450 TO 459	138	534	3.053	11.814
460 TO 469	213	747	4.712	16.527
470 TO 479	250	997	5.531	22.058
480 TO 489	377	1374	8.341	30.398
490 TO 499	465	1839	10.268	40.686
500 TO 509	605	2444	13.385	54.071
510 TO 519	567	3011	12.544	66.615
520 TO 529	563	3574	12.456	79.071
530 TO 539	368	3942	8.142	87.212
540 TO 549	229	4171	5.066	92.279
550 TO 559	137	4308	3.031	95.310
560 TO 569	90	4398	1.991	97.301
570 TO 579	54	4452	1.195	98.496
580 TO 589	31	4483	0.686	99.181
590 TO 599	14	4497	0.310	99.491
600 & OVER	23	4520	0.509	100.000

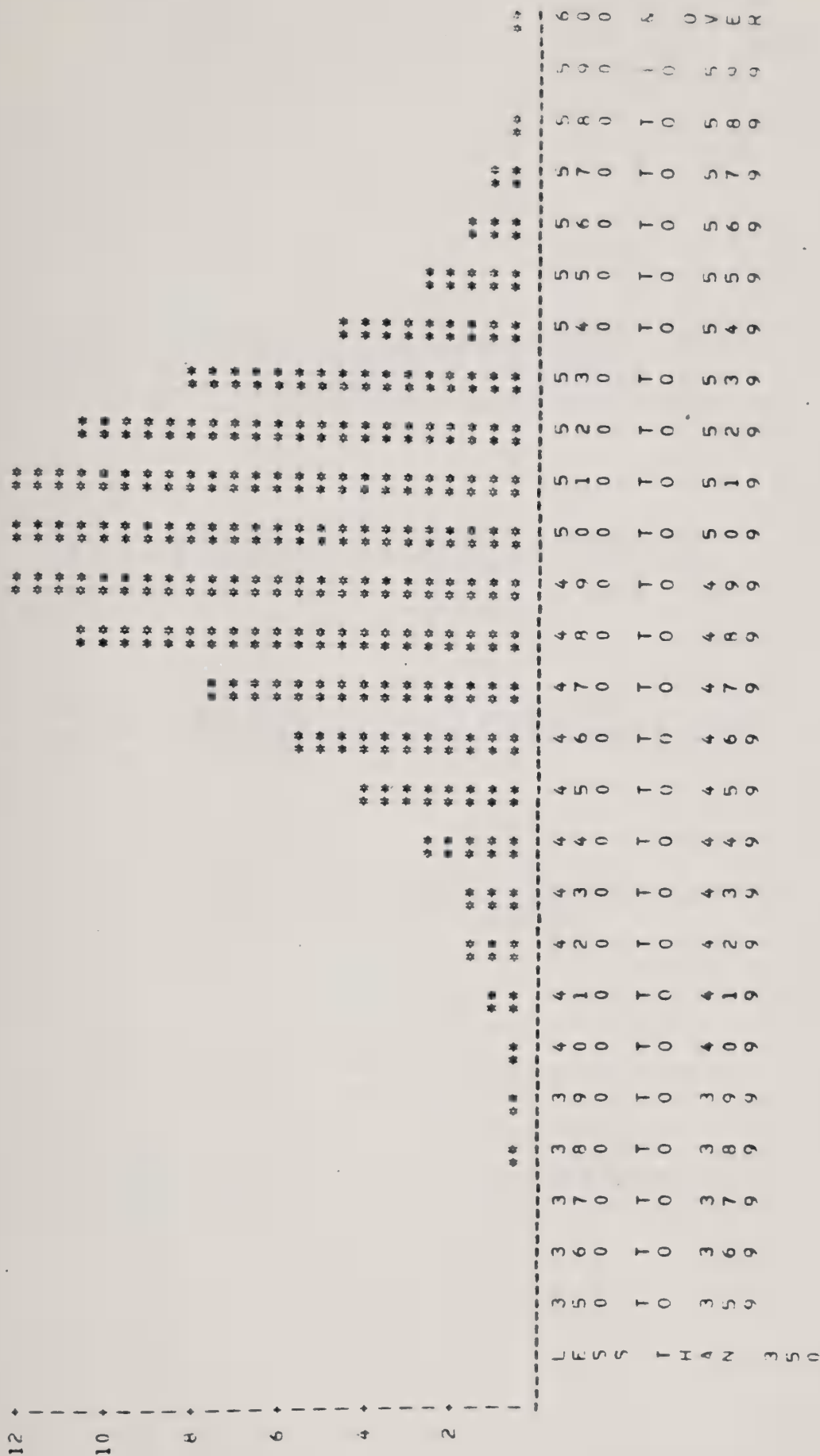




COTTON BALE WEIGHTS BY YEAR  
YEAR=1979-80

PERCENTAGE BAR CHART

PERCENTAGE





FREQUENCY OF LBS BY YEAR  
YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	9		0.187	0.187
350 TO 359	2	11	0.042	0.229
360 TO 369	7	18	0.146	0.375
370 TO 379	7	25	0.146	0.521
380 TO 389	16	41	0.333	0.854
390 TO 399	21	62	0.437	1.291
400 TO 409	35	97	0.729	2.020
410 TO 419	47	144	0.979	2.999
420 TO 429	70	214	1.458	4.456
430 TO 439	71	285	1.479	5.935
440 TO 449	111	396	2.312	8.247
450 TO 459	195	591	4.061	12.307
460 TO 469	264	855	5.498	17.805
470 TO 479	361	1216	7.518	25.323
480 TO 489	502	1718	10.454	35.777
490 TO 499	567	2285	11.808	47.584
500 TO 509	587	2872	12.224	59.808
510 TO 519	572	3444	11.912	71.720
520 TO 529	495	3939	10.306	82.028
530 TO 539	376	4315	7.830	89.858
540 TO 549	210	4525	4.373	94.232
550 TO 559	123	4648	2.561	96.793
560 TO 569	68	4716	1.416	98.209
570 TO 579	43	4759	0.895	99.105
580 TO 589	17	4776	0.354	99.459
590 TO 599	12	4788	0.250	99.708
600 & OVER	14	4802	0.292	100.000

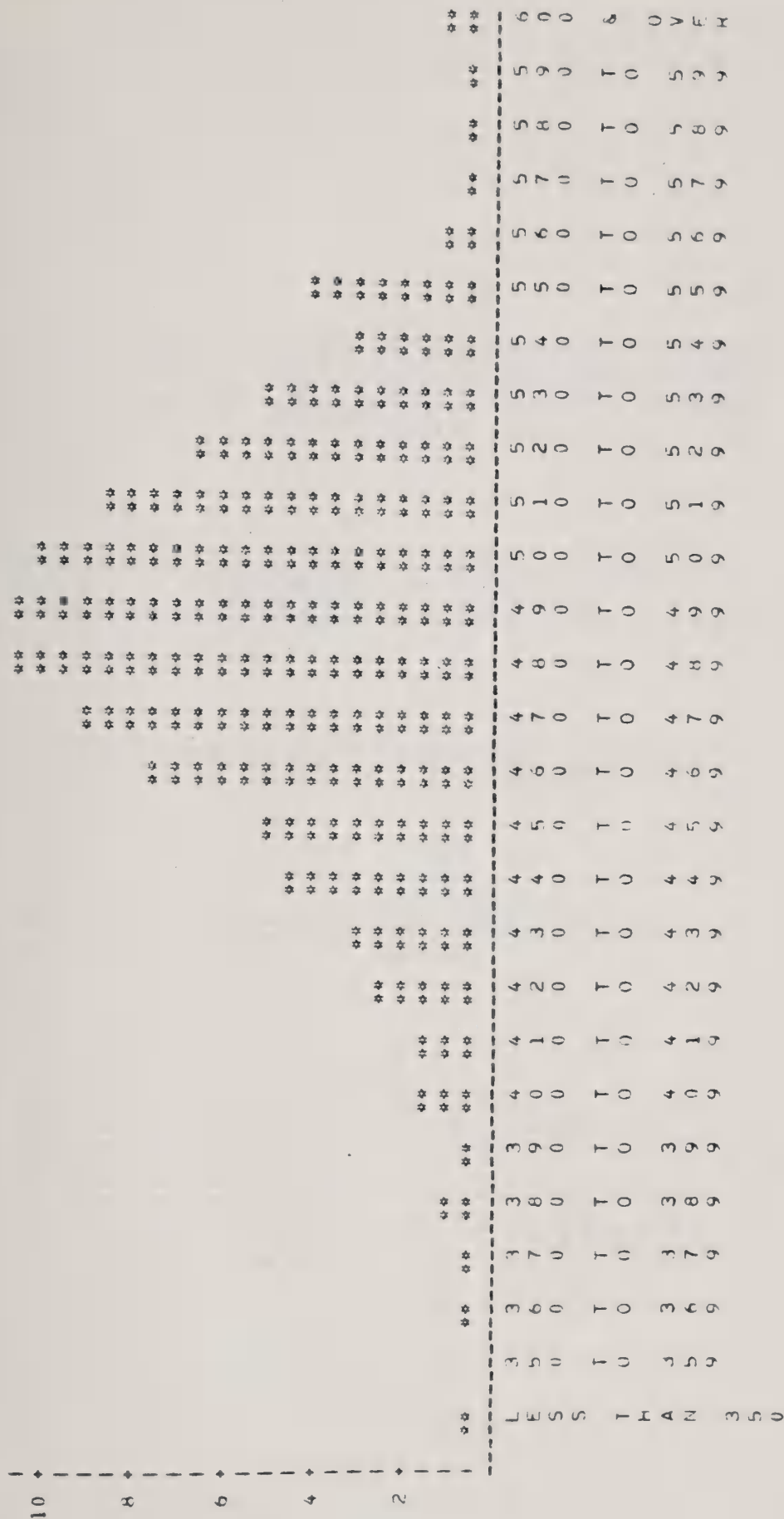


SECTION B-2: cotton bale weights for Arkansas, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



PERCENTAGE BAR CHART

PERCENTAGE



LHS



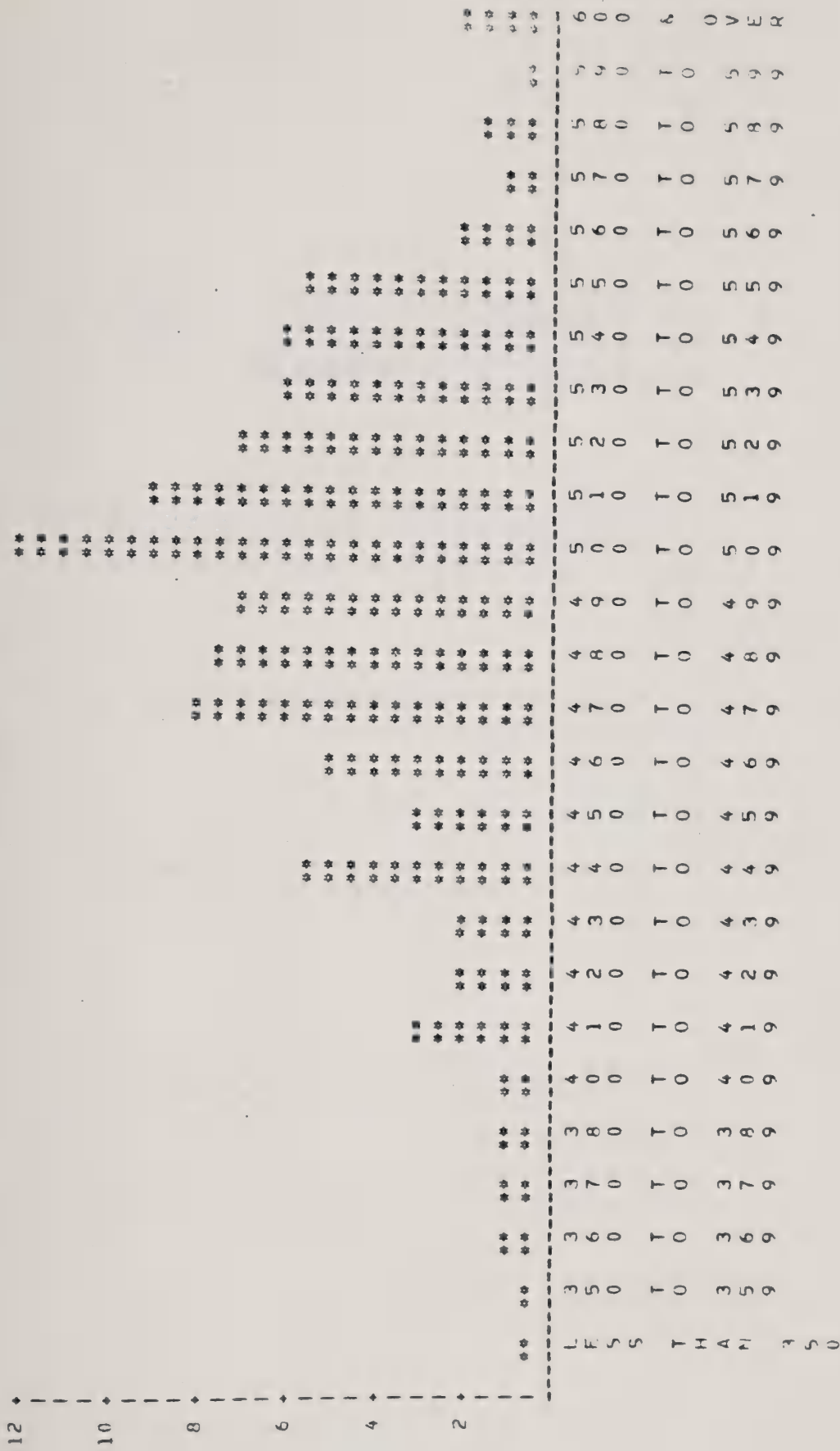


FREQUENCY OF LBS BY STATE  
STATE=AK

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	4	4	0.381	0.381
360 TO 369	2	6	0.191	0.572
370 TO 379	4	10	0.381	0.953
380 TO 389	5	15	0.477	1.430
390 TO 399	8	23	0.763	2.193
400 TO 409	7	30	0.667	2.860
410 TO 419	18	48	1.716	4.576
420 TO 429	18	66	1.716	6.292
430 TO 439	24	90	2.288	8.580
440 TO 449	31	121	2.955	11.535
450 TO 459	49	170	4.671	16.206
460 TO 469	55	225	5.243	21.449
470 TO 479	77	302	7.340	28.789
480 TO 489	96	398	9.152	37.941
490 TO 499	110	508	10.486	48.427
500 TO 509	112	620	10.677	59.104
510 TO 519	107	727	10.200	69.304
520 TO 529	89	816	8.484	77.788
530 TO 539	69	885	6.578	84.366
540 TO 549	52	937	4.957	89.323
550 TO 559	29	966	2.765	92.088
560 TO 569	42	1008	4.004	96.092
570 TO 579	12	1020	1.144	97.235
580 TO 589	5	1025	0.477	97.712
590 TO 599	6	1031	0.572	98.284
600 & OVER	7	1038	0.667	98.951
	11	1049	1.049	100.000



### PERCENTAGE BAR CHART



587



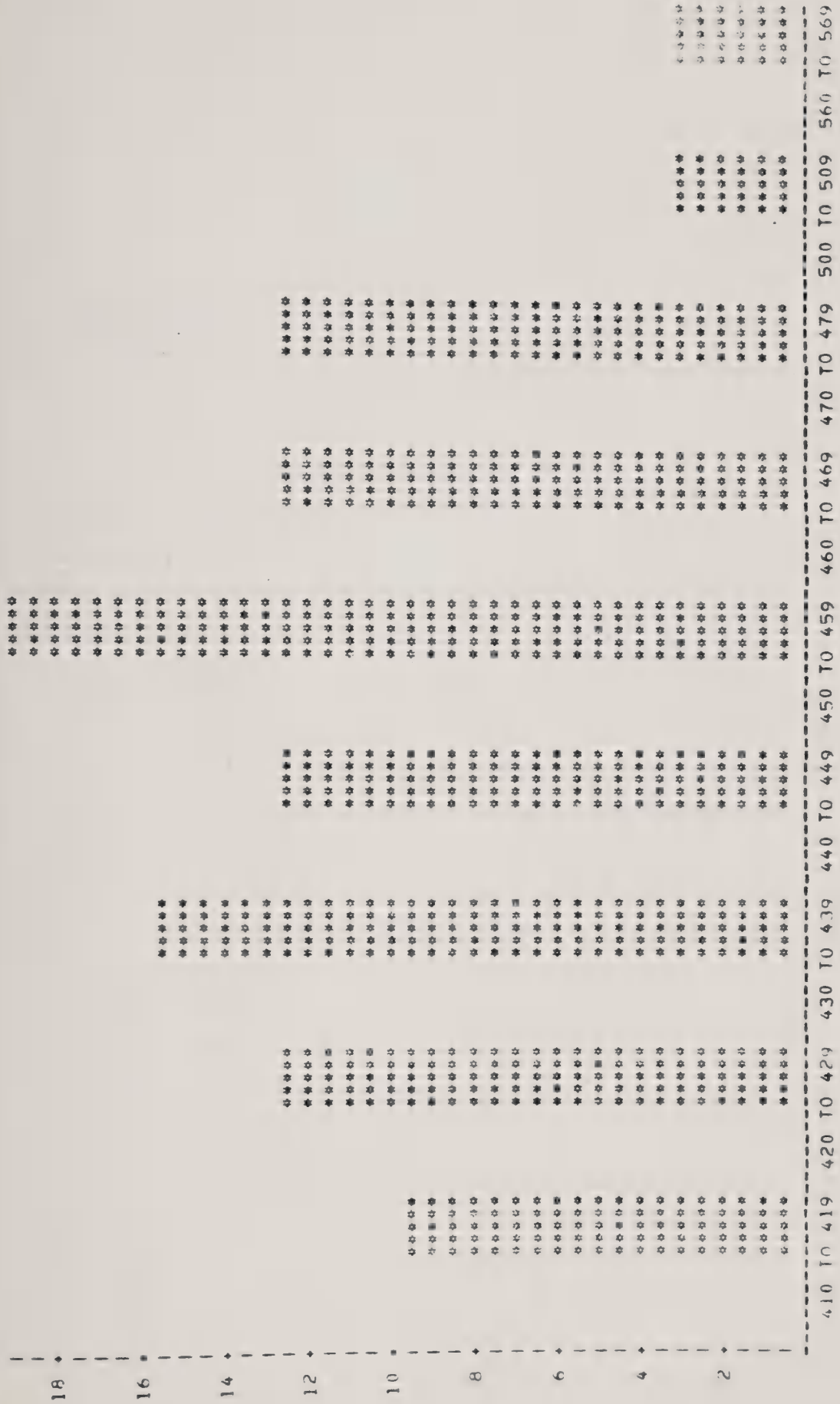
FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	2	2	0.621	0.621
360 TO 369	2	4	0.621	1.242
370 TO 379	3	7	0.932	2.174
380 TO 389	3	10	0.932	3.106
390 TO 399	3	13	0.932	4.037
400 TO 409	3	16	0.932	4.969
410 TO 419	9	25	2.795	7.764
420 TO 429	7	32	2.174	9.938
430 TO 439	7	39	2.174	12.112
440 TO 449	17	56	5.280	17.391
450 TO 459	10	66	3.106	20.497
460 TO 469	16	82	4.969	25.466
470 TO 479	25	107	7.764	33.230
480 TO 489	24	131	7.453	40.683
490 TO 499	22	153	6.832	47.516
500 TO 509	39	192	12.112	59.627
510 TO 519	29	221	9.006	68.634
520 TO 529	22	243	6.832	75.466
530 TO 539	19	262	5.901	81.366
540 TO 549	20	282	6.211	87.578
550 TO 559	17	299	5.280	92.857
560 TO 569	6	305	1.863	94.720
570 TO 579	4	309	1.242	95.963
580 TO 589	5	314	1.553	97.516
590 TO 599	1	315	0.311	97.826
600 & OVER	7	322	2.174	100.000



PERCENTAGE HAR CHART

PERCENTAGE



LBS





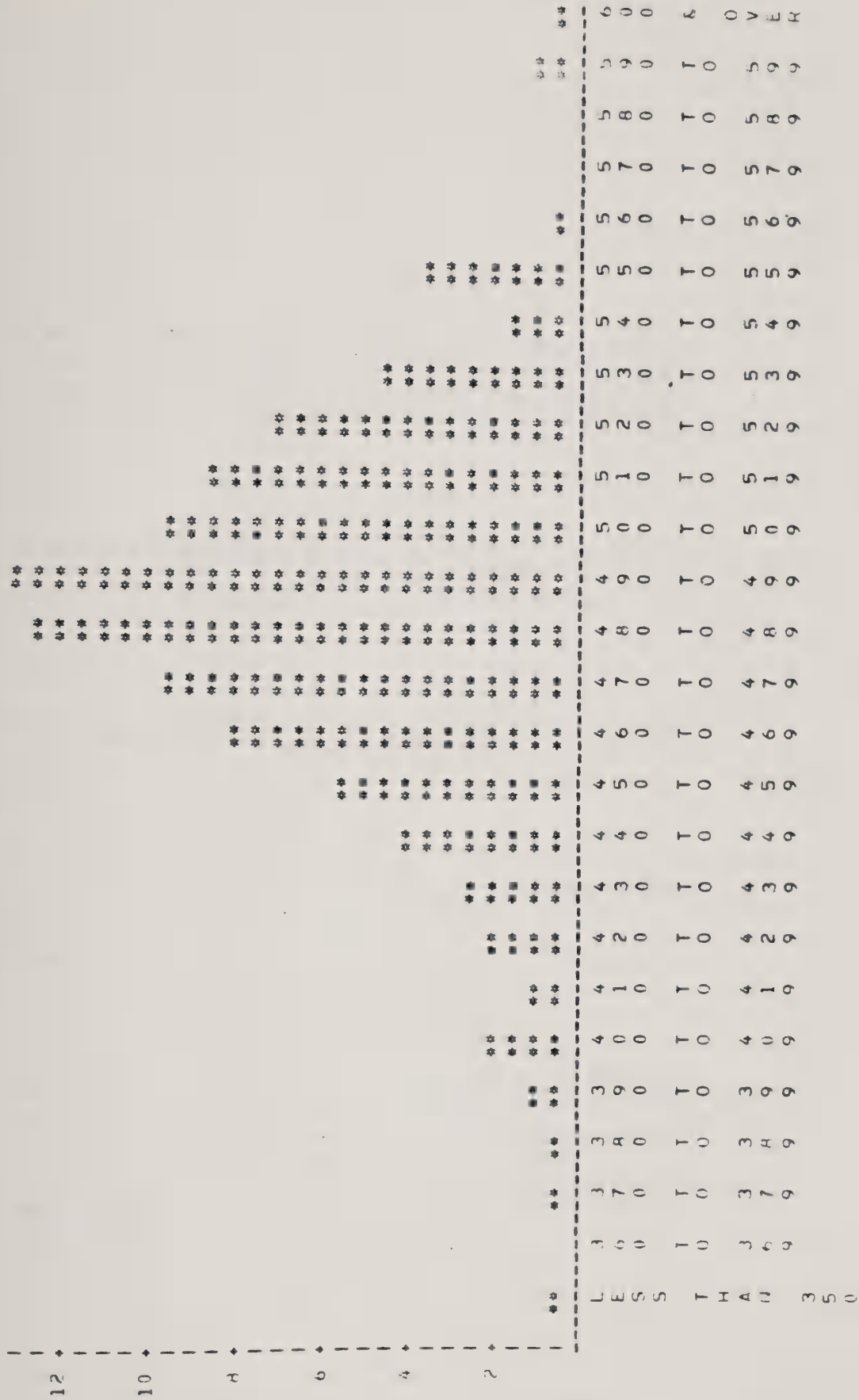
FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1978-79

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
410 TO 419	3	3	9.375	9.375
420 TO 429	4	7	12.500	21.875
430 TO 439	5	12	15.625	37.500
440 TO 449	4	16	12.500	50.000
450 TO 459	6	22	18.750	68.750
460 TO 469	4	26	12.500	81.250
470 TO 479	4	30	12.500	93.750
500 TO 509	1	31	3.125	96.875
560 TO 569	1	32	3.125	100.000



PERCENTAGE BAR CHART

PERCENTAGE



LRS



FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	2		0.288	0.288
360 TO 369	1	3	0.144	0.432
370 TO 379	2	5	0.288	0.719
380 TO 389	5	10	0.719	1.439
390 TO 399	7	17	1.007	2.446
400 TO 409	15	32	2.158	4.604
410 TO 419	6	38	0.863	5.468
420 TO 429	13	51	1.871	7.338
430 TO 439	19	70	2.734	10.072
440 TO 449	23	93	4.029	14.101
450 TO 459	39	137	5.612	19.712
460 TO 469	57	194	8.201	27.914
470 TO 479	67	261	9.640	37.554
480 TO 489	86	347	12.374	49.928
490 TO 499	90	437	12.950	62.878
500 TO 509	67	504	9.640	72.518
510 TO 519	60	564	8.633	81.151
520 TO 529	47	611	6.763	87.914
530 TO 539	33	644	4.748	92.662
540 TO 549	9	653	1.295	93.957
550 TO 559	25	678	3.597	97.554
560 TO 569	5	683	0.719	98.273
570 TO 579	1	684	0.144	98.417
580 TO 589	1	685	0.144	98.561
590 TO 599	6	691	0.863	99.424
600 & OVER	4	695	0.576	100.000



SECTION B-3: cotton bale weights for Arizona, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80

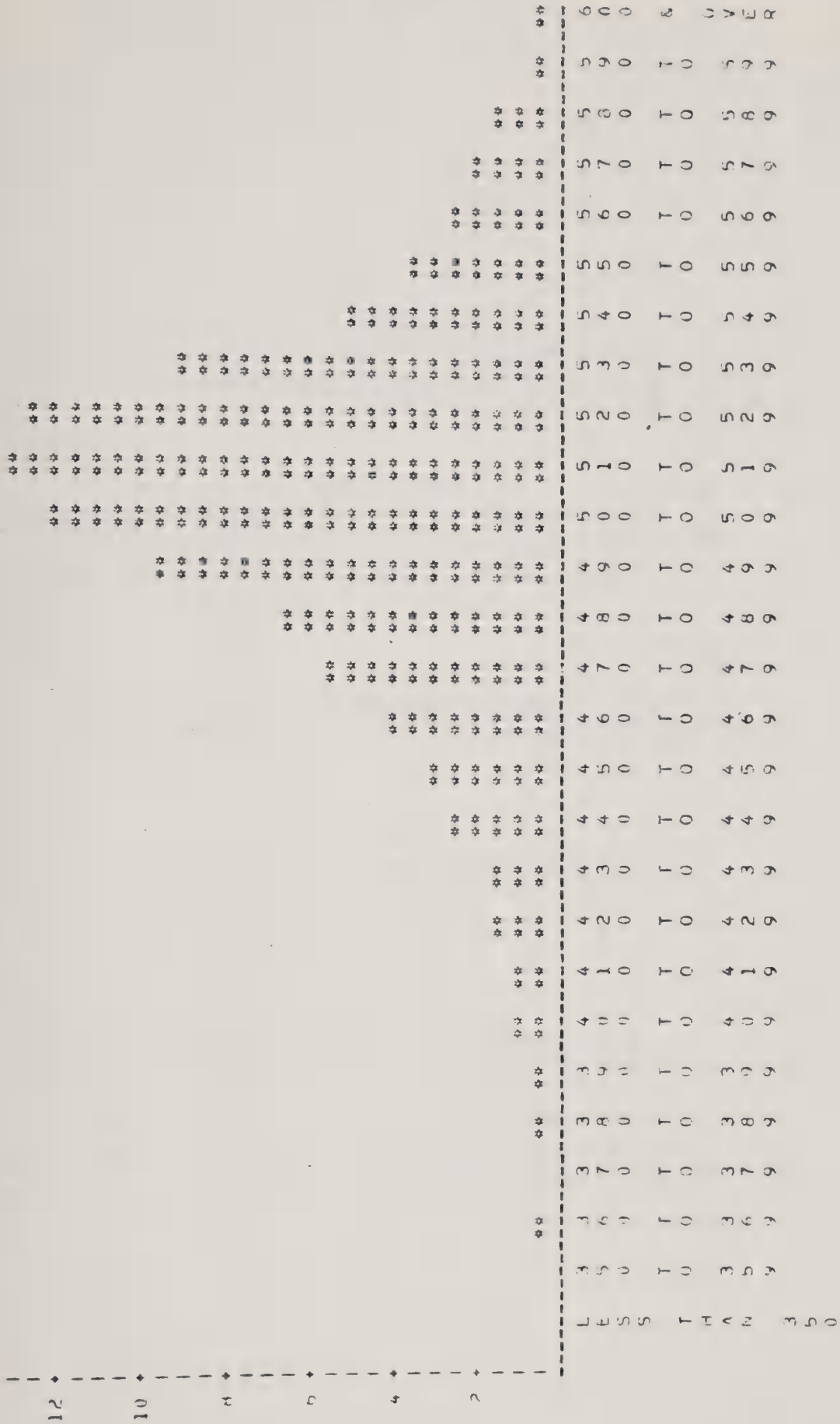




COTTON HALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=AR

PERCENTAGE HALE CHART

PERCENTAGE



LBS



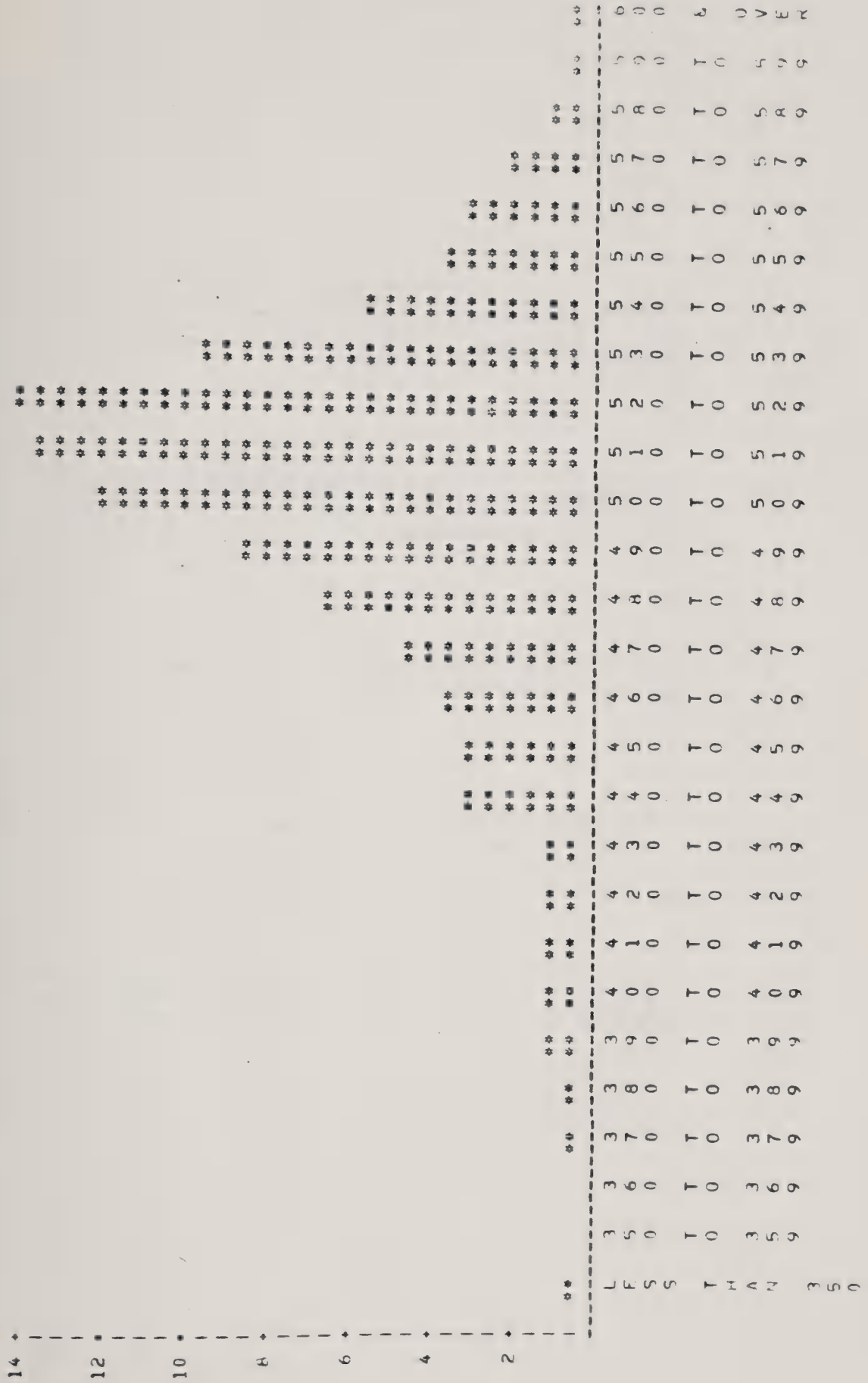
FREQUENCY OF LHS BY STATE  
STATE=AR

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	5	5	0.219	0.219
350 TO 359	4	9	0.175	0.394
360 TO 369	7	16	0.306	0.700
370 TO 379	4	20	0.175	0.875
380 TO 389	8	28	0.350	1.224
390 TO 399	16	44	0.700	1.924
400 TO 409	21	65	0.918	2.842
410 TO 419	19	84	0.831	3.673
420 TO 429	36	120	1.574	5.247
430 TO 439	39	159	1.705	6.952
440 TO 449	55	214	2.405	9.357
450 TO 459	73	287	3.192	12.549
460 TO 469	83	375	3.848	16.397
470 TO 479	123	498	5.378	21.775
480 TO 489	153	651	6.690	28.465
490 TO 499	216	867	9.445	37.910
500 TO 509	276	1143	12.068	49.978
510 TO 519	293	1436	12.812	62.790
520 TO 529	282	1718	12.331	75.120
530 TO 539	209	1927	9.139	84.259
540 TO 549	120	2047	5.247	89.506
550 TO 559	83	2130	3.629	93.135
560 TO 569	56	2186	2.449	95.584
570 TO 579	45	2231	1.968	97.551
580 TO 589	29	2260	1.268	98.819
590 TO 599	11	2271	0.481	99.300
600 & OVER	16	2287	0.700	100.000



PERCENTAGE BAR CHART

PERCENTAGE



LBS



FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	4	4	0.380	0.380
360 TO 369	2	6	0.190	0.570
370 TO 379	1	7	0.095	0.665
380 TO 389	3	10	0.285	0.950
390 TO 399	6	16	0.570	1.519
400 TO 409	8	24	0.760	2.279
410 TO 419	9	33	0.855	3.134
420 TO 429	8	41	0.760	3.894
430 TO 439	11	52	1.045	4.938
440 TO 449	13	65	1.235	6.173
450 TO 459	33	98	3.134	9.307
460 TO 469	29	127	2.754	12.061
470 TO 479	39	166	3.704	15.764
480 TO 489	50	216	4.748	20.513
490 TO 499	68	284	6.458	26.971
500 TO 509	87	371	8.262	35.233
510 TO 519	126	497	11.966	47.198
520 TO 529	142	639	13.485	60.684
530 TO 539	147	786	13.960	74.644
540 TO 549	101	887	9.592	84.236
550 TO 559	56	943	5.318	89.554
560 TO 569	36	979	3.419	92.972
570 TO 579	30	1009	2.849	95.821
580 TO 589	20	1029	1.899	97.721
590 TO 599	12	1041	1.140	98.860
600 & OVER	6	1047	0.570	99.430
	6	1053	0.570	100.000

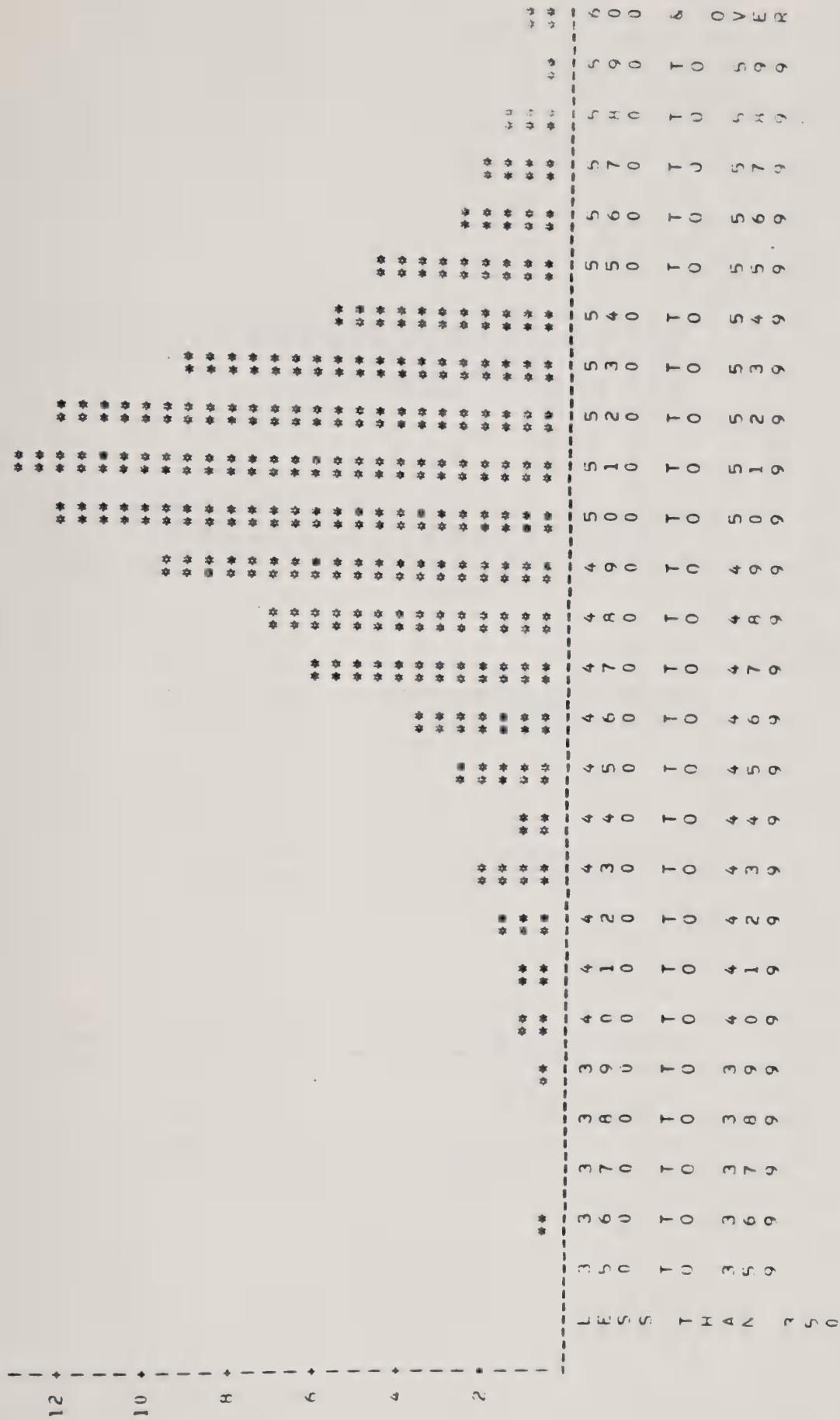




COTTON HALE WEIGHTS BY STATE & YEAR  
STATE=AR YEAR=197H-79

PERCENTAGE BAR CHART

PERCENTAGE



LHS



FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1978-79

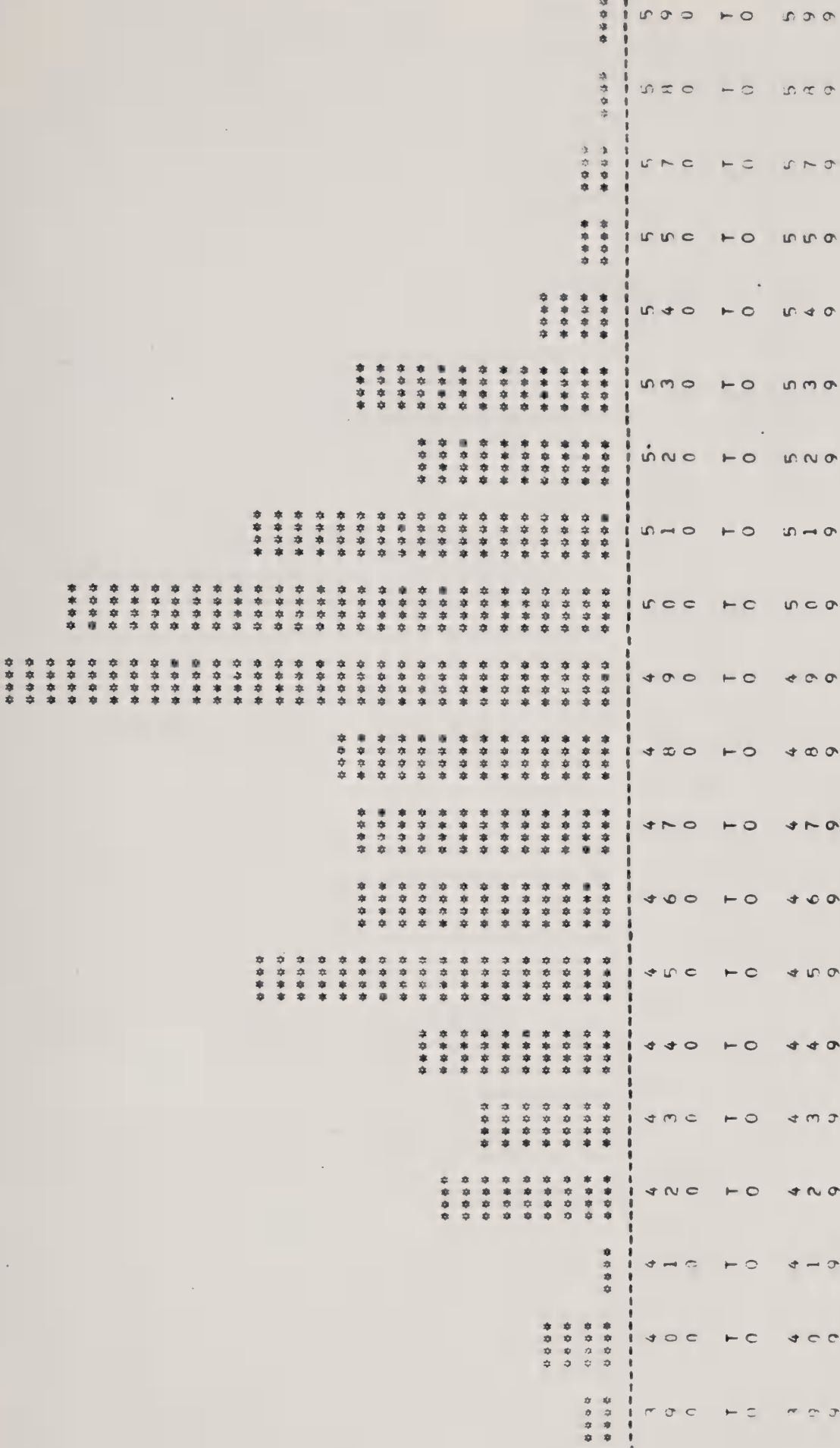
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	1	1	0.095	0.095
360 TO 369	2	3	0.190	0.285
370 TO 379	6	9	0.570	0.855
380 TO 389	1	10	0.095	0.950
390 TO 399	2	12	0.190	1.140
400 TO 409	6	18	0.570	1.709
410 TO 419	8	26	0.760	2.469
420 TO 429	10	36	0.950	3.419
430 TO 439	17	53	1.614	5.033
440 TO 449	20	73	1.899	6.933
450 TO 459	13	86	1.235	8.167
460 TO 469	28	114	2.659	10.826
470 TO 479	37	151	3.514	14.340
480 TO 489	61	212	5.793	20.133
490 TO 499	72	284	6.838	26.971
500 TO 509	102	386	9.687	36.657
510 TO 519	126	512	11.966	48.623
520 TO 529	135	647	12.821	61.443
530 TO 539	126	773	11.966	73.409
540 TO 549	96	869	9.117	82.526
550 TO 559	60	929	5.698	88.224
560 TO 569	45	974	4.274	92.498
570 TO 579	26	1000	2.469	94.967
580 TO 589	23	1023	2.184	97.151
590 TO 599	16	1039	1.519	98.670
600 & OVER	4	1043	0.360	99.050
	10	1053	0.950	100.000



PERCENTAGE BAR CHART

PERCENTAGE

14  
12  
10  
8  
6  
4  
2



LRS



FREQUENCY OF LBS BY YEAR  
STATE=AK YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
390 TO 399	2	2	1.105	1.105
400 TO 409	4	6	2.210	3.315
410 TO 419	1	7	0.552	3.867
420 TO 429	8	15	4.420	8.287
430 TO 439	6	21	3.315	11.602
440 TO 449	9	30	4.972	16.575
450 TO 459	16	46	8.840	25.414
460 TO 469	12	58	6.630	32.044
470 TO 479	12	70	6.630	38.674
480 TO 489	13	83	7.182	45.856
490 TO 499	27	110	14.917	60.773
500 TO 509	24	134	13.260	74.033
510 TO 519	16	150	8.840	82.873
520 TO 529	9	159	4.972	87.845
530 TO 539	12	171	6.630	94.475
540 TO 549	4	175	2.210	96.685
550 TO 559	2	177	1.105	97.790
570 TO 579	2	179	1.105	98.895
580 TO 589	1	180	0.552	99.448
590 TO 599	1	181	0.552	100.000



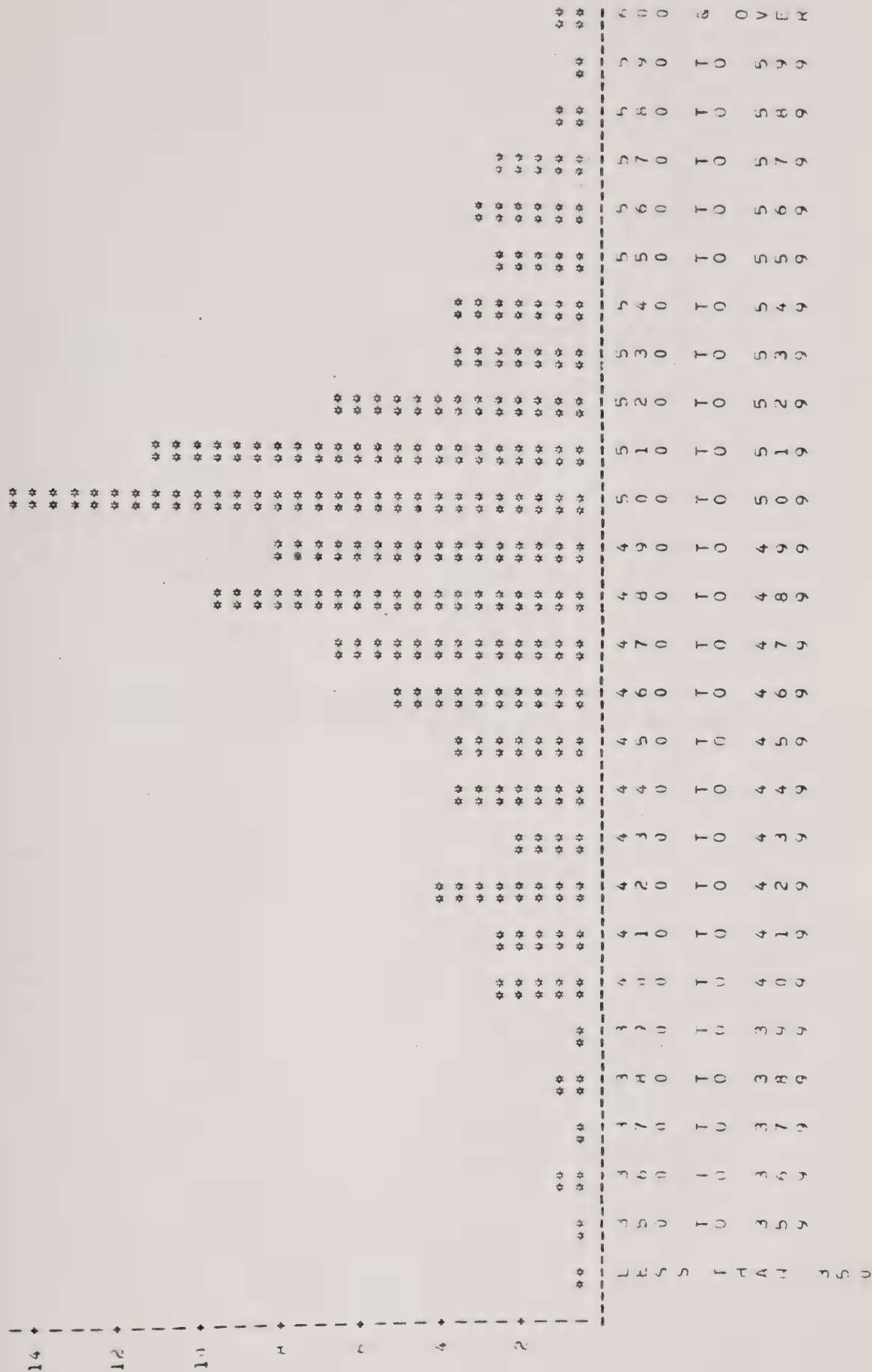


SECTION B-4: cotton bale weights for Louisiana, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



PERCENTAGE BAR CHART

PERCENTAGE



LHS



FREQUENCY OF LBS BY STATE  
STATE=LA

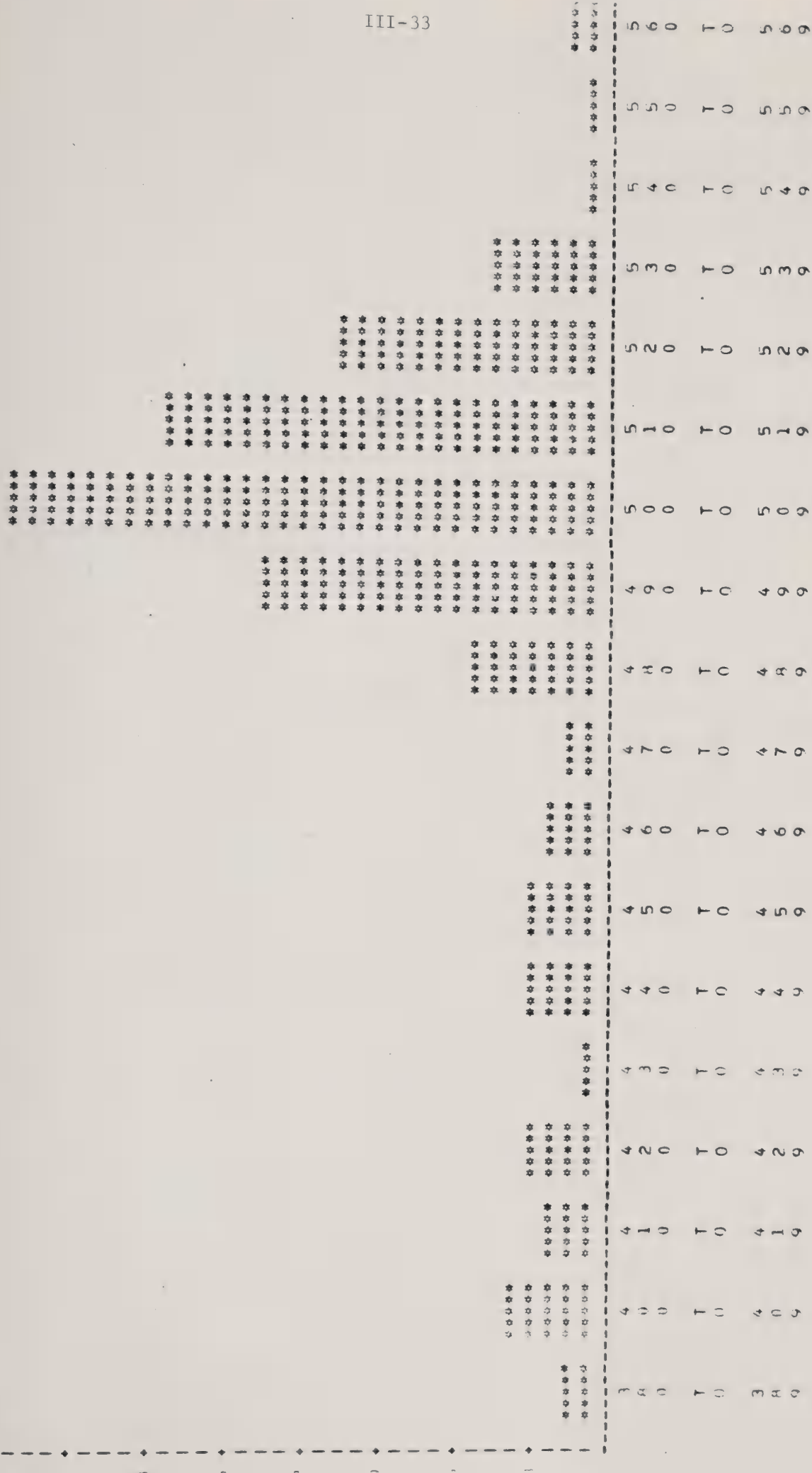
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	4		0.635	0.635
350 TO 359	3	7	0.476	1.111
360 TO 369	5	12	0.794	1.905
370 TO 379	3	15	0.476	2.381
380 TO 389	5	20	0.794	3.175
390 TO 399	2	22	0.317	3.492
400 TO 409	16	38	2.540	6.032
410 TO 419	17	55	2.698	8.730
420 TO 429	25	80	3.968	12.698
430 TO 439	13	93	2.053	14.762
440 TO 449	21	114	3.333	18.095
450 TO 459	23	137	3.651	21.746
460 TO 469	31	168	4.921	26.667
470 TO 479	42	210	6.667	33.333
480 TO 489	60	270	9.524	42.857
490 TO 499	51	321	8.095	50.952
500 TO 509	90	411	14.286	65.238
510 TO 519	70	481	11.111	76.349
520 TO 529	40	521	6.349	82.698
530 TO 539	23	544	3.651	86.349
540 TO 549	21	565	3.333	89.683
550 TO 559	15	580	2.381	92.063
560 TO 569	19	599	3.016	95.079
570 TO 579	16	615	2.540	97.619
580 TO 589	6	621	0.952	98.571
590 TO 599	2	623	0.317	98.889
600 & OVER	7	630	1.111	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=LA YEAR=1977-78

PERCENTAGE BAR CHART

PERCENTAGE



LBS





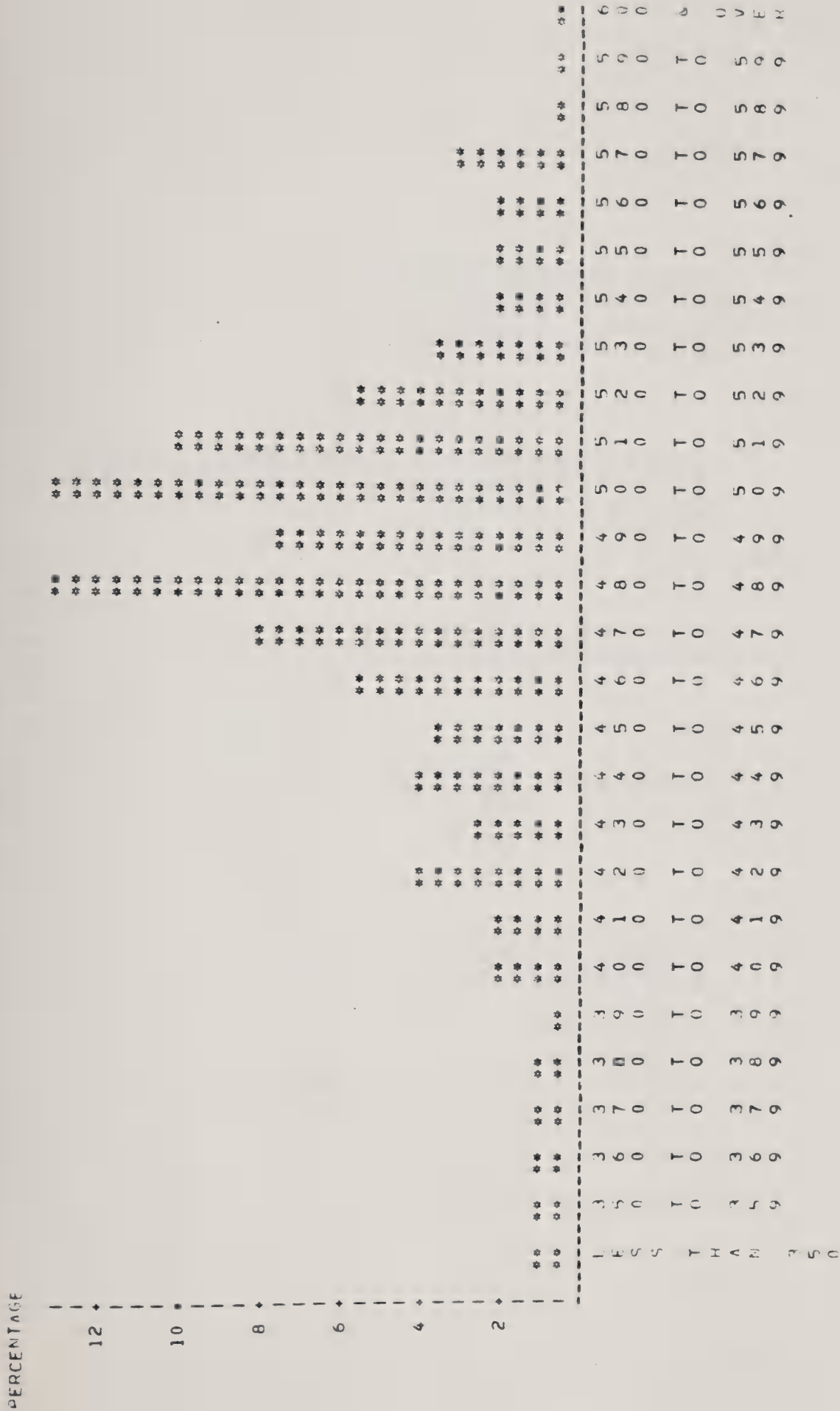
FREQUENCY OF LBS BY YEAR  
STATE=LA YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
380 TO 389	2	2	1.587	1.587
400 TO 409	5	7	3.968	5.556
410 TO 419	3	10	2.381	7.937
420 TO 429	4	14	3.175	11.111
430 TO 439	1	15	0.794	11.905
440 TO 449	4	19	3.175	15.079
450 TO 459	4	23	3.175	18.254
460 TO 469	3	26	2.381	20.635
470 TO 479	2	28	1.587	22.222
480 TO 489	7	35	5.556	27.778
490 TO 499	17	52	13.492	41.270
500 TO 509	29	81	23.016	64.286
510 TO 519	22	103	17.460	81.746
520 TO 529	13	116	10.317	92.063
530 TO 539	6	122	4.762	96.825
540 TO 549	1	123	0.794	97.619
550 TO 559	1	124	0.794	98.413
560 TO 569	2	126	1.587	100.000



COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=LA YEAR=1978-79

PERCENTAGE BAR CHART



LRS



FREQUENCY OF LHS BY YEAR  
STATE=LA YEAR=1978-79

LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	4	4	1.093	1.093
360 TO 369	3	7	0.820	1.913
370 TO 379	4	11	1.093	3.005
380 TO 389	3	14	0.820	3.825
390 TO 399	3	17	0.820	4.645
400 TO 409	1	18	0.273	4.918
410 TO 419	8	26	2.186	7.104
420 TO 429	8	34	2.186	9.290
430 TO 439	15	49	4.098	13.388
440 TO 449	9	58	2.459	15.847
450 TO 459	14	72	3.825	19.672
460 TO 469	13	85	3.552	23.224
470 TO 479	21	106	5.738	28.962
480 TO 489	29	135	7.923	36.885
490 TO 499	48	183	13.115	50.000
500 TO 509	27	210	7.377	57.377
510 TO 519	47	257	12.842	70.219
520 TO 529	36	293	9.836	80.055
530 TO 539	20	313	5.464	85.519
540 TO 549	13	326	3.552	89.071
550 TO 559	8	334	2.186	91.257
560 TO 569	8	342	2.186	93.443
570 TO 579	7	349	1.913	95.355
580 TO 589	11	360	3.005	98.361
590 TO 599	2	362	0.546	98.907
600 & OVER	2	364	0.546	99.454
	2	366	0.546	100.000



### PERCENTAGE BAR CHART







FREQUENCY OF LBS BY YEAR  
STATE=LA YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	1	1	0.725	0.725
390 TO 399	1	2	0.725	1.449
400 TO 409	3	5	2.174	3.623
410 TO 419	6	11	4.348	7.971
420 TO 429	6	17	4.348	12.319
430 TO 439	3	20	2.174	14.493
440 TO 449	3	23	2.174	16.667
450 TO 459	6	29	4.348	21.014
460 TO 469	7	36	5.072	26.087
470 TO 479	11	47	7.971	34.058
480 TO 489	5	52	3.623	37.681
490 TO 499	7	59	5.072	42.754
500 TO 509	14	73	10.145	52.899
510 TO 519	12	85	8.696	61.594
520 TO 529	7	92	5.072	66.667
530 TO 539	4	96	2.899	69.565
540 TO 549	12	108	8.696	78.261
550 TO 559	6	114	4.348	82.609
560 TO 569	10	124	7.246	89.855
570 TO 579	5	129	3.623	93.478
580 TO 589	4	133	2.899	96.377
600 & OVER	5	138	3.623	100.000



SECTION B-5: cotton bale weights for Missouri, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80







FREQUENCY OF LHS BY STATE  
STATE=MO

LHS	FRQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	2	2	0.208	0.208
350 TO 359	1	3	0.104	0.312
360 TO 369	3	6	0.313	0.625
370 TO 379	2	8	0.208	0.833
380 TO 389	6	14	0.625	1.458
390 TO 399	5	19	0.521	1.979
400 TO 409	7	26	0.729	2.708
410 TO 419	16	42	1.667	4.375
420 TO 429	18	60	1.875	6.250
430 TO 439	18	78	1.875	8.125
440 TO 449	31	109	3.229	11.354
450 TO 459	56	165	5.833	17.187
460 TO 469	71	236	7.396	24.583
470 TO 479	84	320	8.750	33.333
480 TO 489	77	397	8.021	41.354
490 TO 499	100	497	10.417	51.771
500 TO 509	118	615	12.292	64.062
510 TO 519	101	716	10.521	74.583
520 TO 529	70	786	7.292	81.875
530 TO 539	57	843	5.938	87.812
540 TO 549	38	881	3.958	91.771
550 TO 559	31	912	3.229	95.000
560 TO 569	19	931	1.979	96.979
570 TO 579	13	944	1.354	98.333
580 TO 589	5	949	0.521	98.854
590 TO 599	4	953	0.417	99.271
600 & OVER	7	960	0.729	100.000

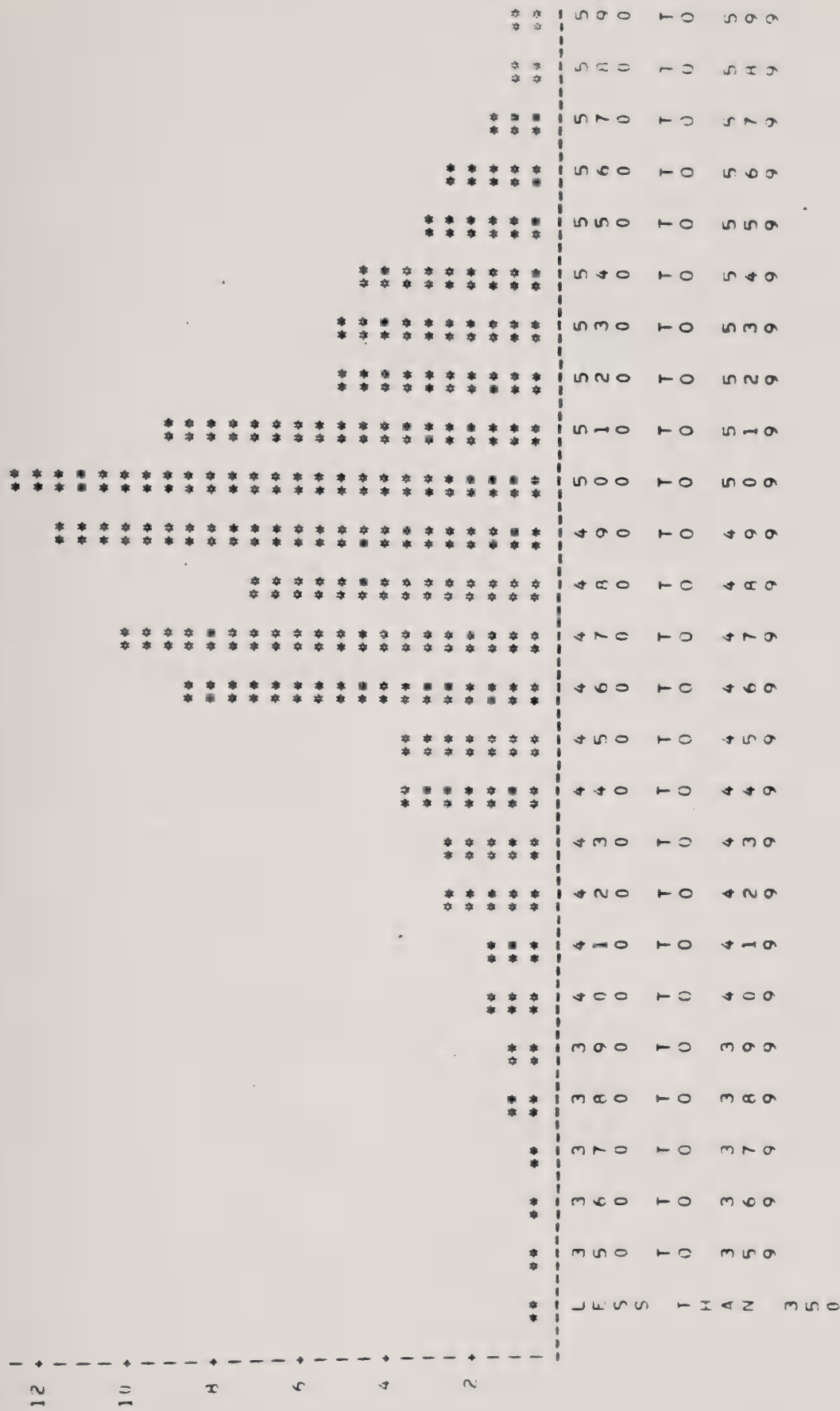




COTTON BALE WEIGHTS BY STATE & YEAR  
STATE=MO YFAR=1977-78

PERCENTAGE HAR CHART

PERCENTAGE



LBS



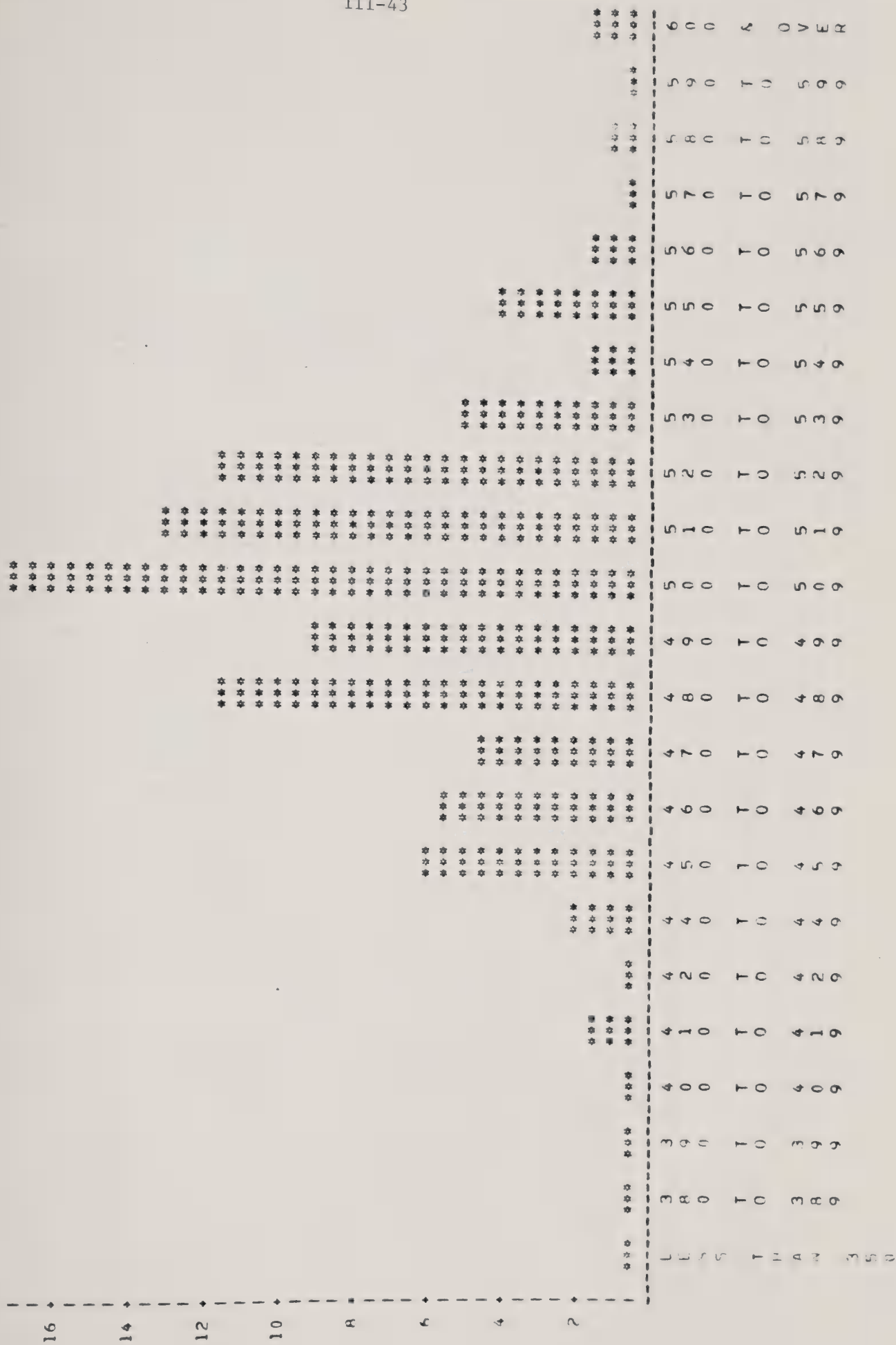
FREQUENCY OF LBS BY YEAR  
STATE=MO YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	1	1	0.286	0.286
360 TO 369	1	2	0.286	0.571
370 TO 379	2	4	0.571	1.143
380 TO 389	2	6	0.571	1.714
390 TO 399	3	9	0.857	2.571
400 TO 409	3	12	0.857	3.429
410 TO 419	5	17	1.429	4.857
420 TO 429	6	23	1.714	6.571
430 TO 439	8	31	2.286	8.857
440 TO 449	8	39	2.286	11.143
450 TO 459	12	51	3.429	14.571
460 TO 469	13	64	3.714	18.286
470 TO 479	30	94	8.571	26.857
480 TO 489	35	129	10.000	36.857
490 TO 499	25	154	7.143	44.000
500 TO 509	41	195	11.714	55.714
510 TO 519	44	239	12.571	68.286
520 TO 529	32	271	9.143	77.429
530 TO 539	18	289	5.143	82.571
540 TO 549	17	306	4.857	87.429
550 TO 559	15	321	4.286	91.714
560 TO 569	10	331	2.857	94.571
570 TO 579	8	339	2.286	96.857
580 TO 589	5	344	1.429	98.286
590 TO 599	3	347	0.857	99.143
	3	350	0.857	100.000



PERCENTAGE BAR CHART

PERCENTAGE





FREQUENCY OF LBS BY YEAR  
STATE=MO YEAR=1978-79

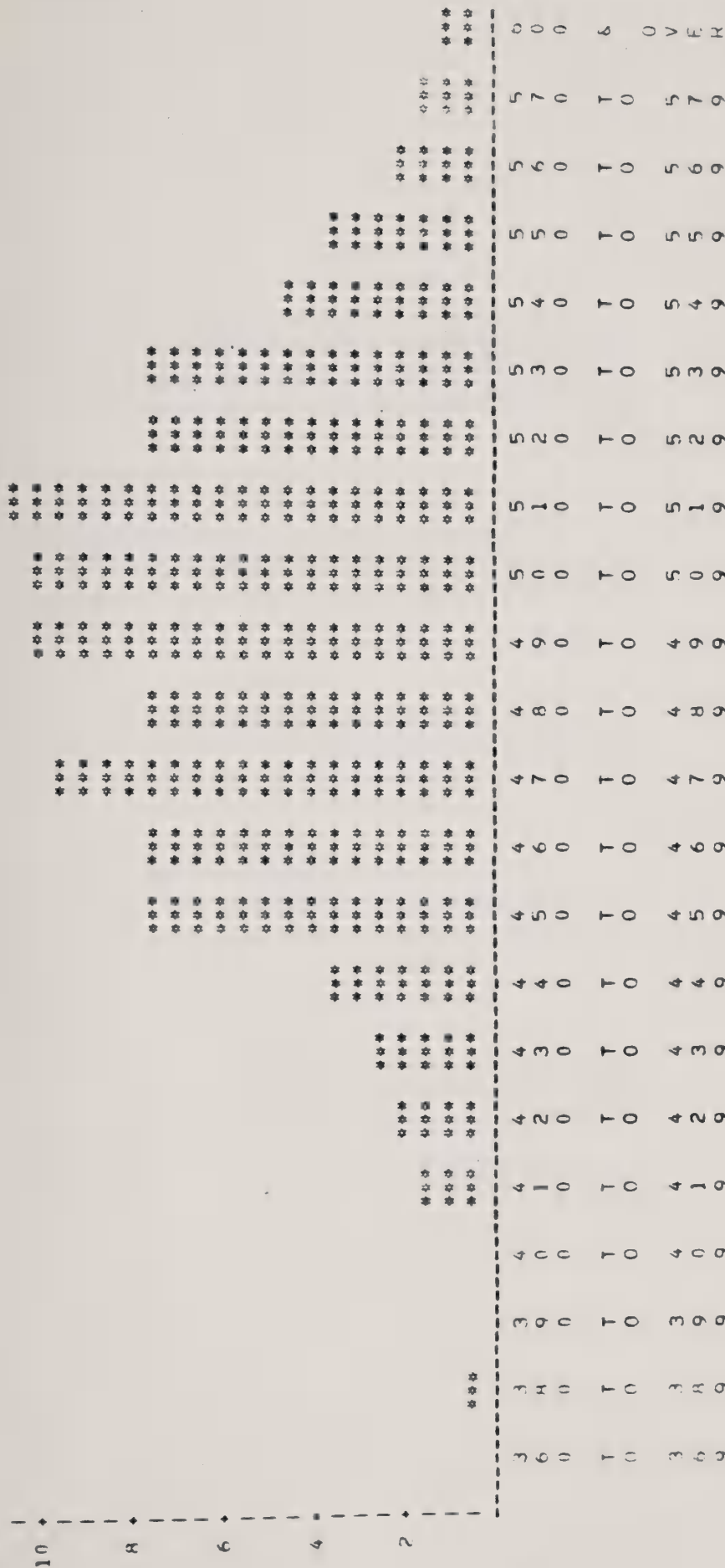
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
340 TO 349	1	1	0.543	0.543
350 TO 359	1	2	0.543	1.087
360 TO 369	1	3	0.543	1.630
370 TO 379	1	4	0.543	2.174
380 TO 389	3	7	1.630	3.804
390 TO 399	1	8	0.543	4.348
400 TO 409	4	12	2.174	6.522
410 TO 419	11	23	5.978	12.500
420 TO 429	10	33	5.435	17.935
430 TO 439	8	41	4.348	22.283
440 TO 449	21	62	11.413	33.696
450 TO 459	17	79	9.239	42.935
460 TO 469	31	110	16.848	59.783
470 TO 479	24	134	13.043	72.826
480 TO 489	21	155	11.413	84.239
490 TO 499	9	164	4.891	89.130
500 TO 509	3	167	1.630	90.761
510 TO 519	7	174	3.804	94.565
520 TO 529	3	177	1.630	96.196
530 TO 539	1	178	0.543	96.739
540 TO 549	2	180	1.087	97.826
550 TO 559	1	181	0.543	98.370
560 TO 569	3	184	1.630	100.000
600 & OVER				





PERCENTAGE HAR CHART

PERCENTAGE



LRS



FREQUENCY OF LBS BY YEAR  
STATE=MO YEAR=1979-80

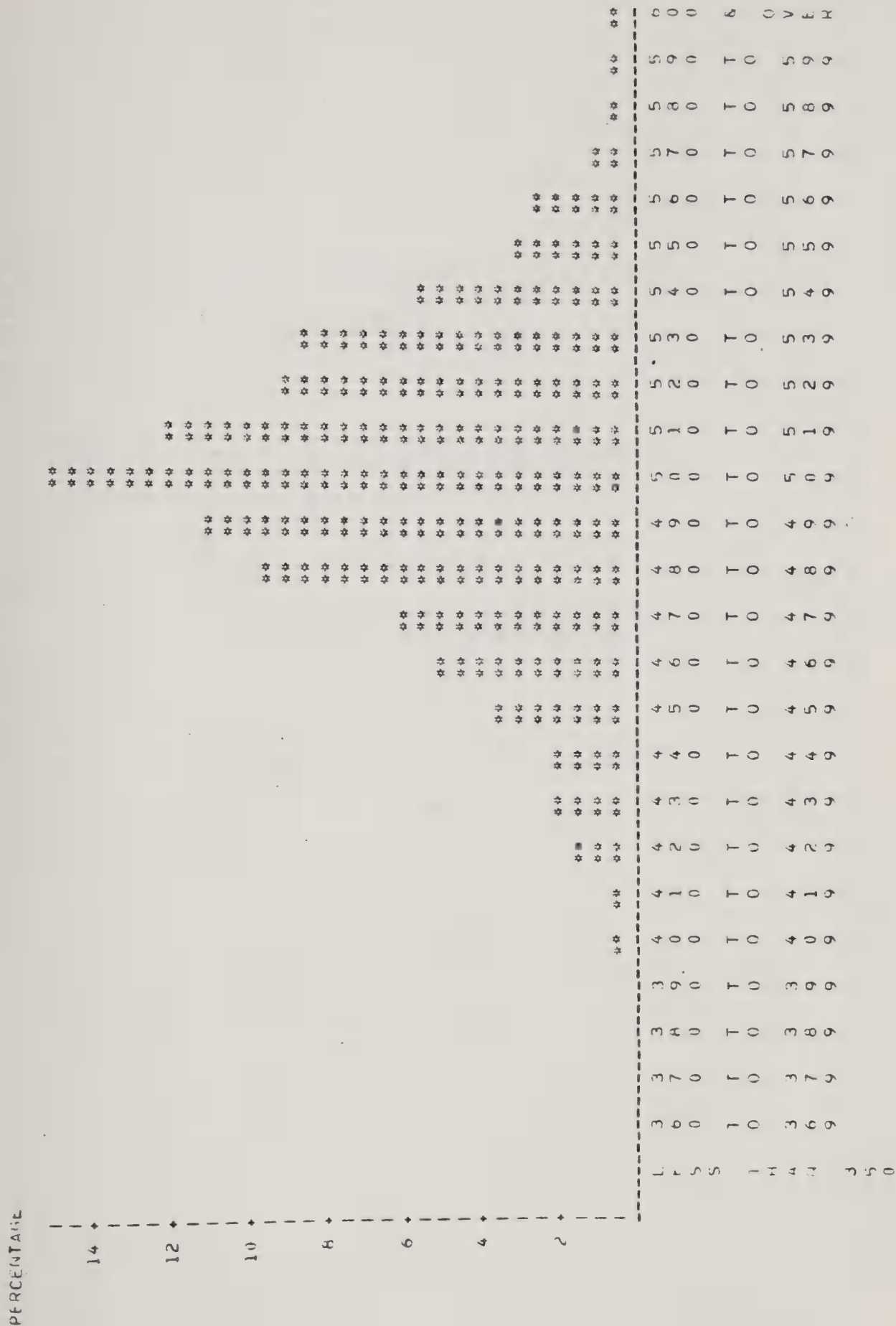
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	1	1	0.235	0.235
380 TO 389	2	3	0.469	0.704
390 TO 399	1	4	0.235	0.939
400 TO 409	1	5	0.235	1.174
410 TO 419	7	12	1.643	2.817
420 TO 429	9	21	2.113	4.930
430 TO 439	10	31	2.347	7.277
440 TO 449	15	46	3.521	10.798
450 TO 459	32	78	7.512	18.310
460 TO 469	31	109	7.277	25.587
470 TO 479	41	150	9.624	35.211
480 TO 489	31	181	7.277	42.488
490 TO 499	42	223	9.859	52.347
500 TO 509	43	266	10.094	62.441
510 TO 519	45	311	10.563	73.005
520 TO 529	31	342	7.277	80.282
530 TO 539	31	373	7.277	87.559
540 TO 549	20	393	4.695	92.254
550 TO 559	14	407	3.286	95.540
560 TO 569	8	415	1.878	97.418
570 TO 579	7	422	1.643	99.061
600 & OVER	4	426	0.939	100.000



SECTION B-6: cotton bale weights for New Mexico, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



### PERCENTAGE BAR CHART







FREQUENCY OF LHS BY STATE  
STATE=NM

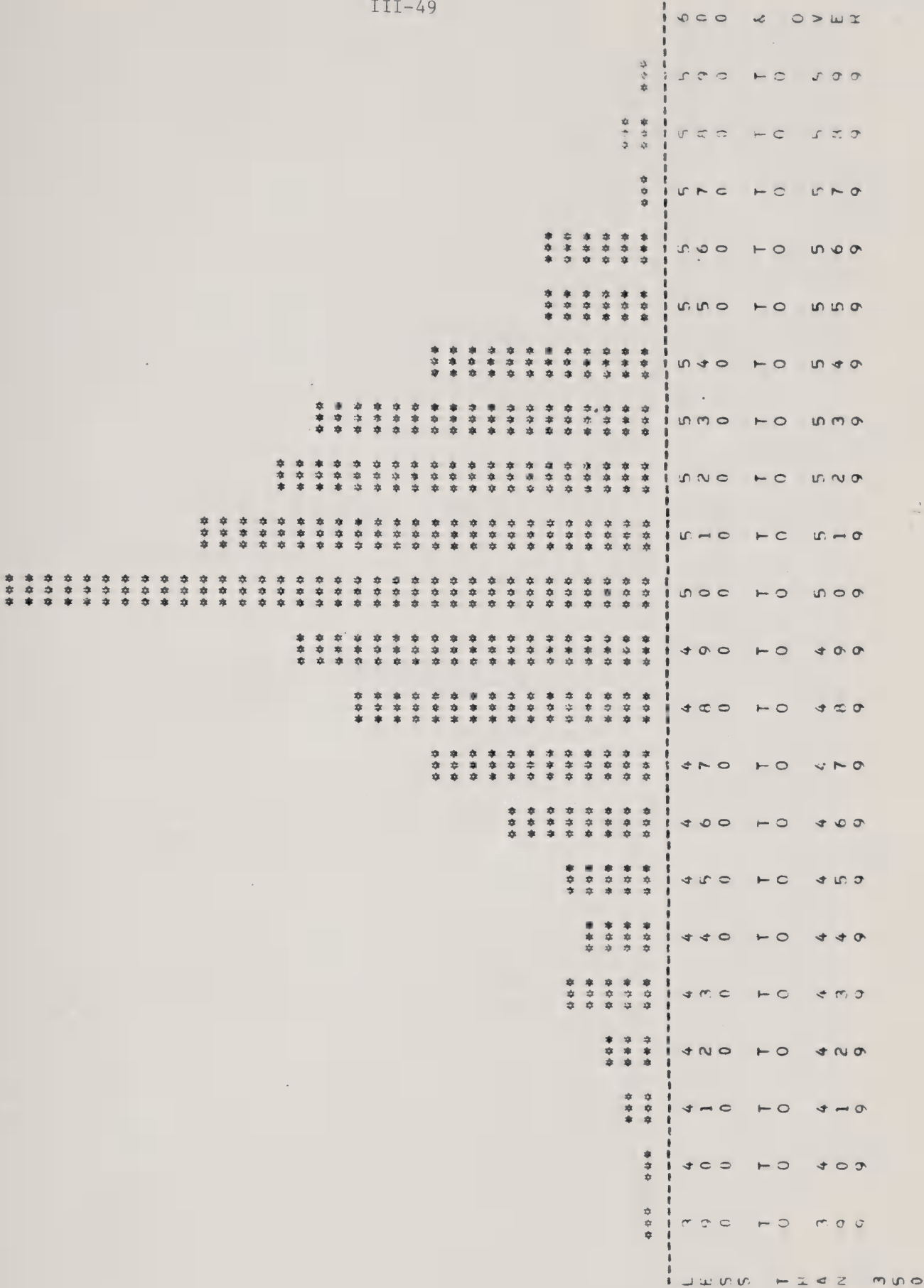
LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
360 TO 369	2	2	0.118	0.118
370 TO 379	1	3	0.059	0.176
380 TO 389	1	4	0.059	0.235
390 TO 399	3	7	0.176	0.412
400 TO 409	4	11	0.235	0.647
410 TO 419	7	18	0.412	1.058
420 TO 429	10	28	0.588	1.646
430 TO 439	25	53	1.470	3.116
440 TO 449	32	85	1.881	4.997
450 TO 459	38	123	2.234	7.231
460 TO 469	62	185	3.645	10.876
470 TO 479	83	268	4.879	15.755
480 TO 489	105	373	6.173	21.928
490 TO 499	158	531	9.289	31.217
500 TO 509	187	718	10.994	42.210
510 TO 519	252	970	14.815	57.025
520 TO 529	208	1178	12.228	69.253
530 TO 539	155	1333	9.112	78.366
540 TO 549	141	1474	8.289	86.655
550 TO 559	97	1571	5.703	92.357
560 TO 569	51	1622	2.998	95.356
570 TO 579	41	1663	2.410	97.766
580 TO 589	15	1678	0.882	98.648
590 TO 599	10	1688	0.588	99.236
600 & OVER	8	1696	0.470	99.706
	5	1701	0.294	100.000



PERCENTAGE BAR CHART

PERCENTAGE

16  
14  
12  
10  
8  
6  
4  
2





FREQUENCY OF LRS BY YEAR  
STATE=NM YEAR=1977-78

LRS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	1	1	0.134	0.134
390 TO 399	2	3	0.269	0.403
400 TO 409	4	7	0.538	0.941
410 TO 419	7	14	0.941	1.882
420 TO 429	11	25	1.478	3.360
430 TO 439	17	42	2.285	5.645
440 TO 449	16	58	2.151	7.796
450 TO 459	17	75	2.285	10.081
460 TO 469	29	104	3.898	13.978
470 TO 479	45	149	6.048	20.027
480 TO 489	59	208	7.930	27.957
490 TO 499	71	279	9.543	37.500
500 TO 509	126	407	17.204	54.704
510 TO 519	90	497	12.097	66.801
520 TO 529	74	571	9.946	76.747
530 TO 539	67	638	9.005	85.753
540 TO 549	45	683	6.048	91.801
550 TO 559	22	705	2.957	94.758
560 TO 569	23	728	3.091	97.849
570 TO 579	5	733	0.672	98.522
580 TO 589	6	739	0.806	99.328
590 TO 599	4	743	0.538	99.866
600 & OVER	1	744	0.134	100.000



PERCENTAGE BAR CHART

PERCENTAGE



LRS





FREQUENCY OF LHS BY YEAR  
STATE=NM YEAR=1976-79

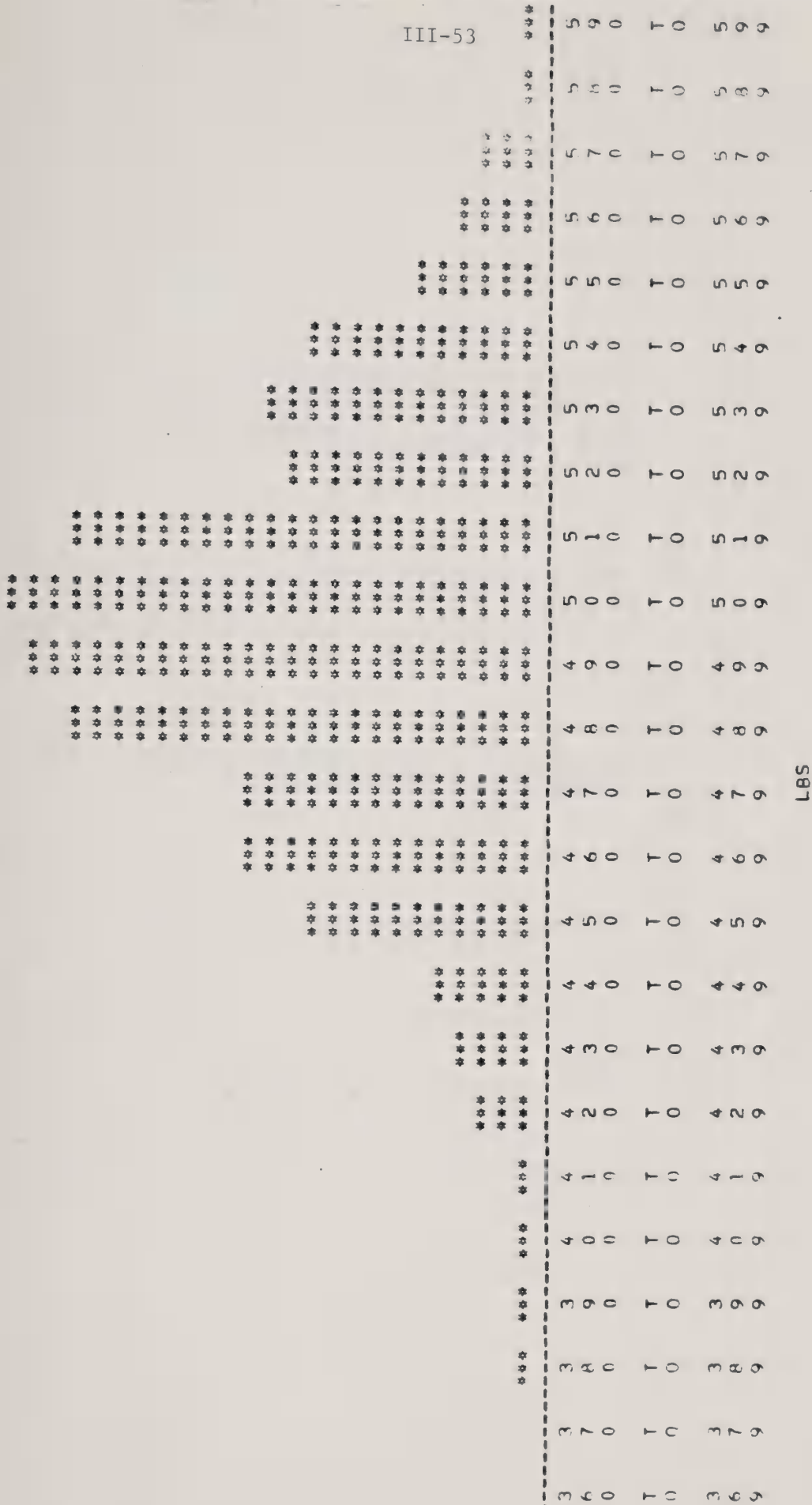
LHS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	1	1	0.303	0.303
410 TO 419	1	2	0.303	0.606
420 TO 429	6	8	1.818	2.424
430 TO 439	3	11	0.909	3.333
440 TO 449	5	16	1.515	4.848
450 TO 459	11	27	3.333	8.182
460 TO 469	9	36	2.727	10.909
470 TO 479	15	51	4.545	15.455
480 TO 489	30	81	9.091	24.545
490 TO 499	40	121	12.121	36.667
500 TO 509	46	167	13.939	50.606
510 TO 519	43	215	14.545	65.152
520 TO 529	43	258	13.030	78.182
530 TO 539	32	290	9.697	87.879
540 TO 549	19	309	5.758	93.636
550 TO 559	9	318	2.727	96.364
560 TO 569	5	323	1.515	97.879
570 TO 579	2	325	0.606	98.485
580 TO 589	1	326	0.303	98.788
600 & OVER	4	330	1.212	100.000



PERCENTAGE BAR CHART

PERCENTAGE

12  
10  
8  
6  
4  
2





FREQUENCY OF LBS BY YEAR  
STATE=NM YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360	1	1	0.159	0.159
370	1	2	0.159	0.319
380	3	5	0.478	0.797
390	2	7	0.319	1.116
400	3	10	0.478	1.595
410	2	12	0.319	1.914
420	8	20	1.276	3.190
430	12	32	1.914	5.104
440	17	49	2.711	7.815
450	34	83	5.423	13.238
460	45	128	7.177	20.415
470	45	173	7.177	27.592
480	69	242	11.005	38.596
490	76	318	12.121	50.718
500	78	396	12.440	63.158
510	70	466	11.164	74.322
520	38	504	6.061	80.383
530	42	546	6.699	87.081
540	33	579	5.263	92.344
550	20	599	3.190	95.534
560	13	612	2.073	97.608
570	8	620	1.276	98.884
580	4	624	0.638	99.522
590	3	627	0.478	100.000



SECTION B-7: cotton bale weights for Oklahoma, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80

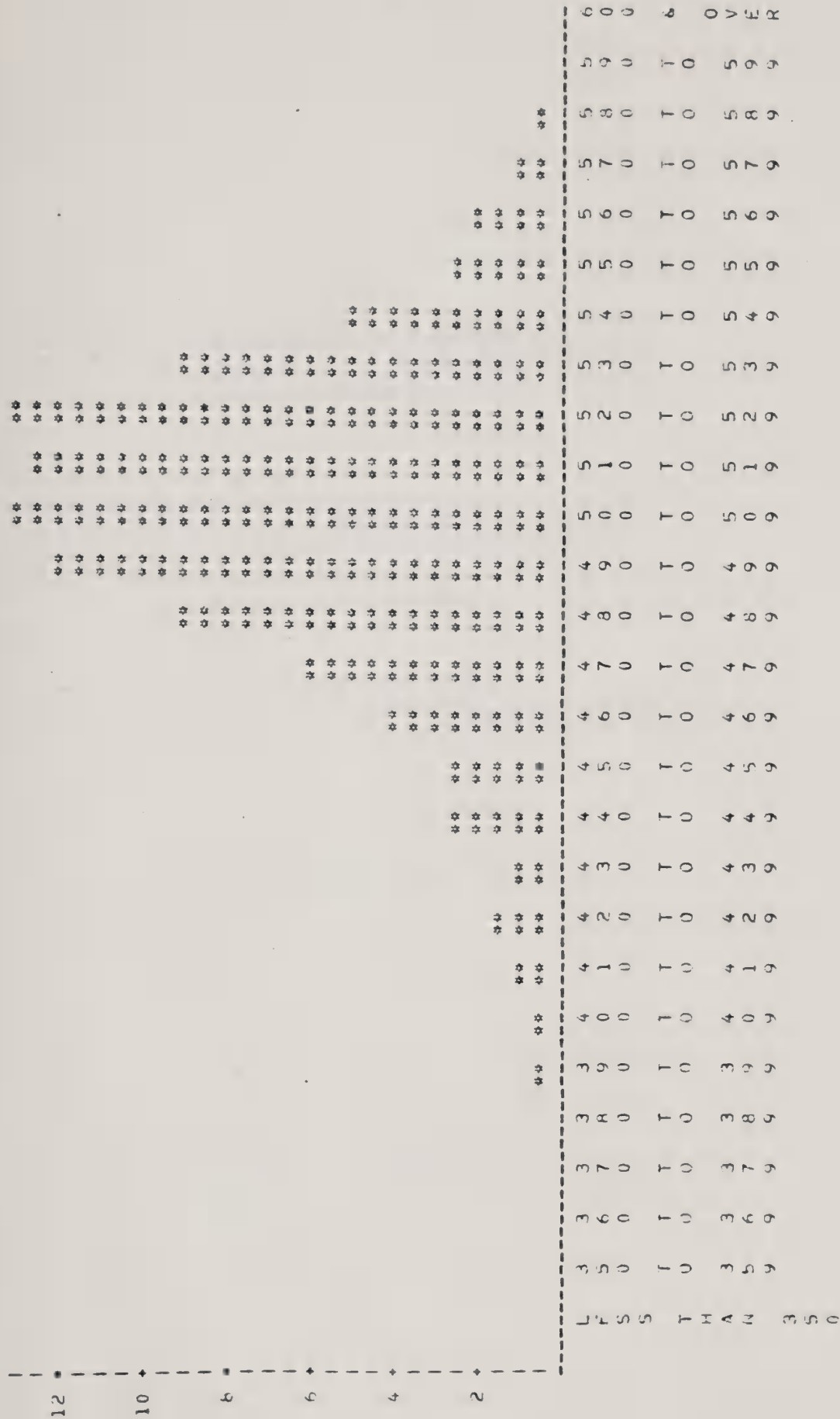




COTTON RALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=OK

PERCENTAGE BAR CHART

PERCENTAGE



LHS



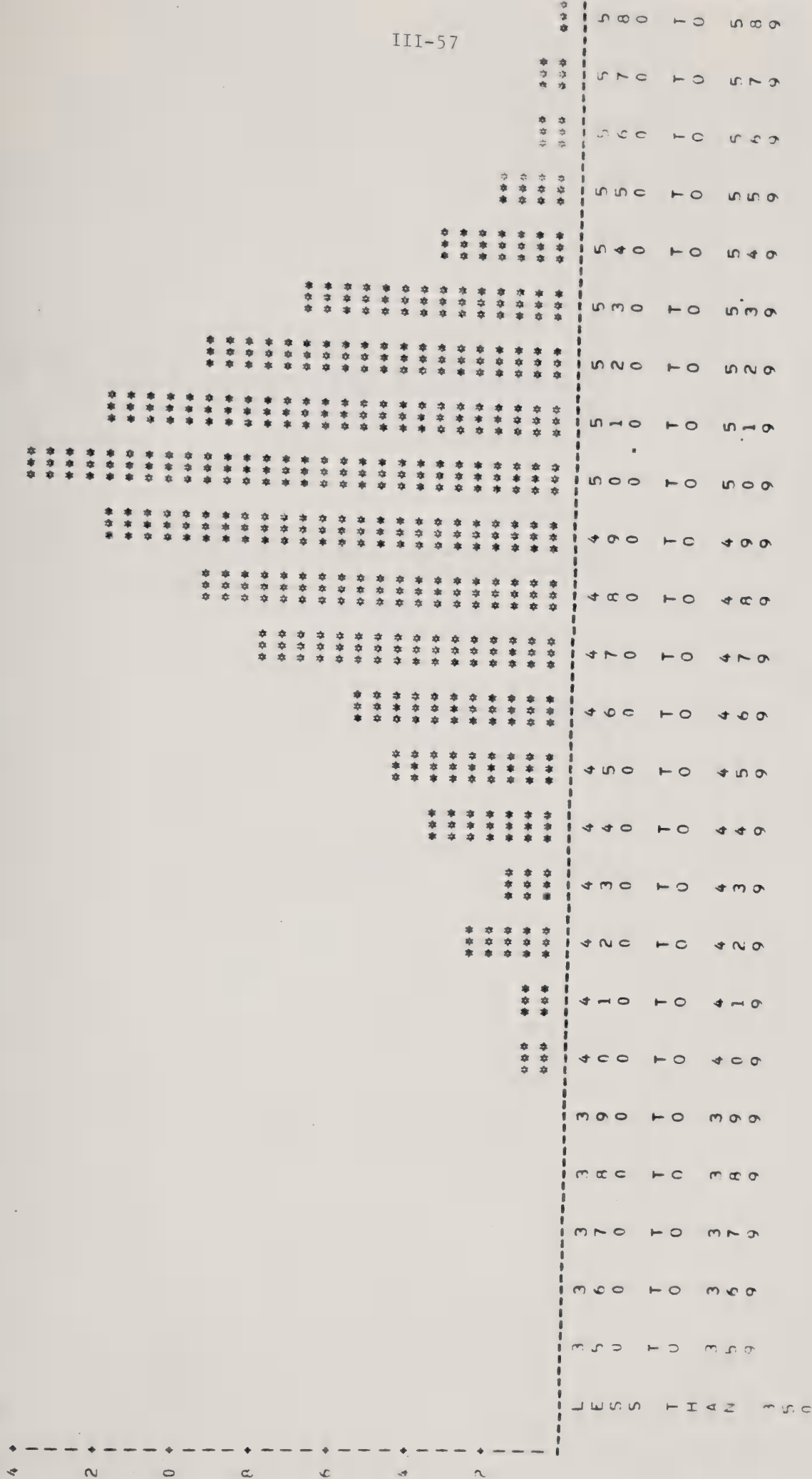
FREQUENCY OF LBS BY STATE  
STATE=OK

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	12	12	0.244	0.244
350 TO 359	4	16	0.081	0.325
360 TO 369	7	23	0.142	0.467
370 TO 379	7	30	0.142	0.609
380 TO 389	12	42	0.244	0.853
390 TO 399	14	56	0.284	1.137
400 TO 409	30	86	0.609	1.747
410 TO 419	49	135	0.995	2.742
420 TO 429	82	217	1.665	4.407
430 TO 439	52	269	1.056	5.463
440 TO 449	115	384	2.335	7.799
450 TO 459	134	518	2.721	10.520
460 TO 469	187	705	3.798	14.318
470 TO 479	285	990	5.788	20.106
480 TO 489	451	1441	9.159	29.265
490 TO 499	580	2021	11.779	41.044
500 TO 509	645	2666	13.099	54.143
510 TO 519	620	3292	12.713	66.856
520 TO 529	634	3925	12.876	79.732
530 TO 539	444	4370	9.017	88.749
540 TO 549	253	4623	5.138	93.887
550 TO 559	132	4755	2.681	96.568
560 TO 569	90	4845	1.828	98.396
570 TO 579	46	4891	0.934	99.330
580 TO 589	22	4913	0.447	99.777
590 TO 599	7	4920	0.142	99.919
600 & OVER	4	4924	0.081	100.000



### PERCENTAGE BAR CHART

CERTAGF



LABS



FREQUENCY OF LBS BY YEAR  
STATE=OK YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	2	2	0.138	0.138
360 TO 369	1	3	0.069	0.207
370 TO 379	2	5	0.138	0.345
380 TO 389	3	8	0.207	0.551
390 TO 399	3	11	0.207	0.758
400 TO 409	2	13	0.138	0.896
410 TO 419	11	24	0.758	1.654
420 TO 429	16	40	1.103	2.757
430 TO 439	35	75	2.412	5.169
440 TO 449	23	98	1.585	6.754
450 TO 459	52	150	3.584	10.338
460 TO 469	64	214	4.411	14.748
470 TO 479	80	294	5.513	20.262
480 TO 489	116	410	7.994	28.256
490 TO 499	139	549	9.580	37.836
500 TO 509	172	721	11.854	49.690
510 TO 519	201	922	13.853	63.542
520 TO 529	171	1093	11.785	75.327
530 TO 539	141	1234	9.717	85.045
540 TO 549	100	1334	6.892	91.937
550 TO 559	53	1387	3.653	95.589
560 TO 569	28	1415	1.930	97.519
570 TO 579	17	1432	1.172	98.691
580 TO 589	14	1446	0.965	99.655
	5	1451	0.345	100.000

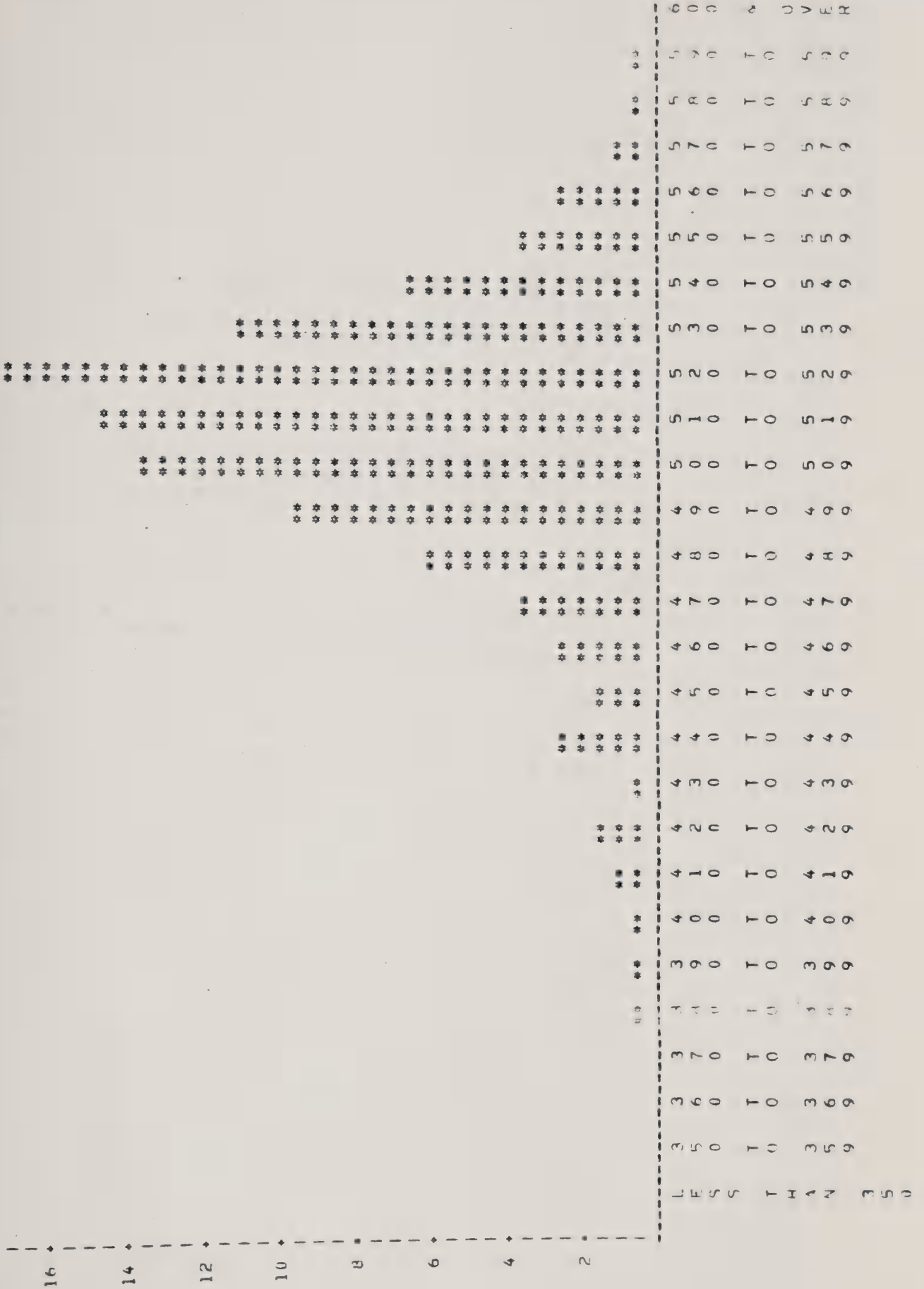




COTTON HALE WEIGHTS BY STATE & YEAR  
STATE=OK YEAR=1978-79

PERCENTAGE BAR CHART

PERCENTAGE





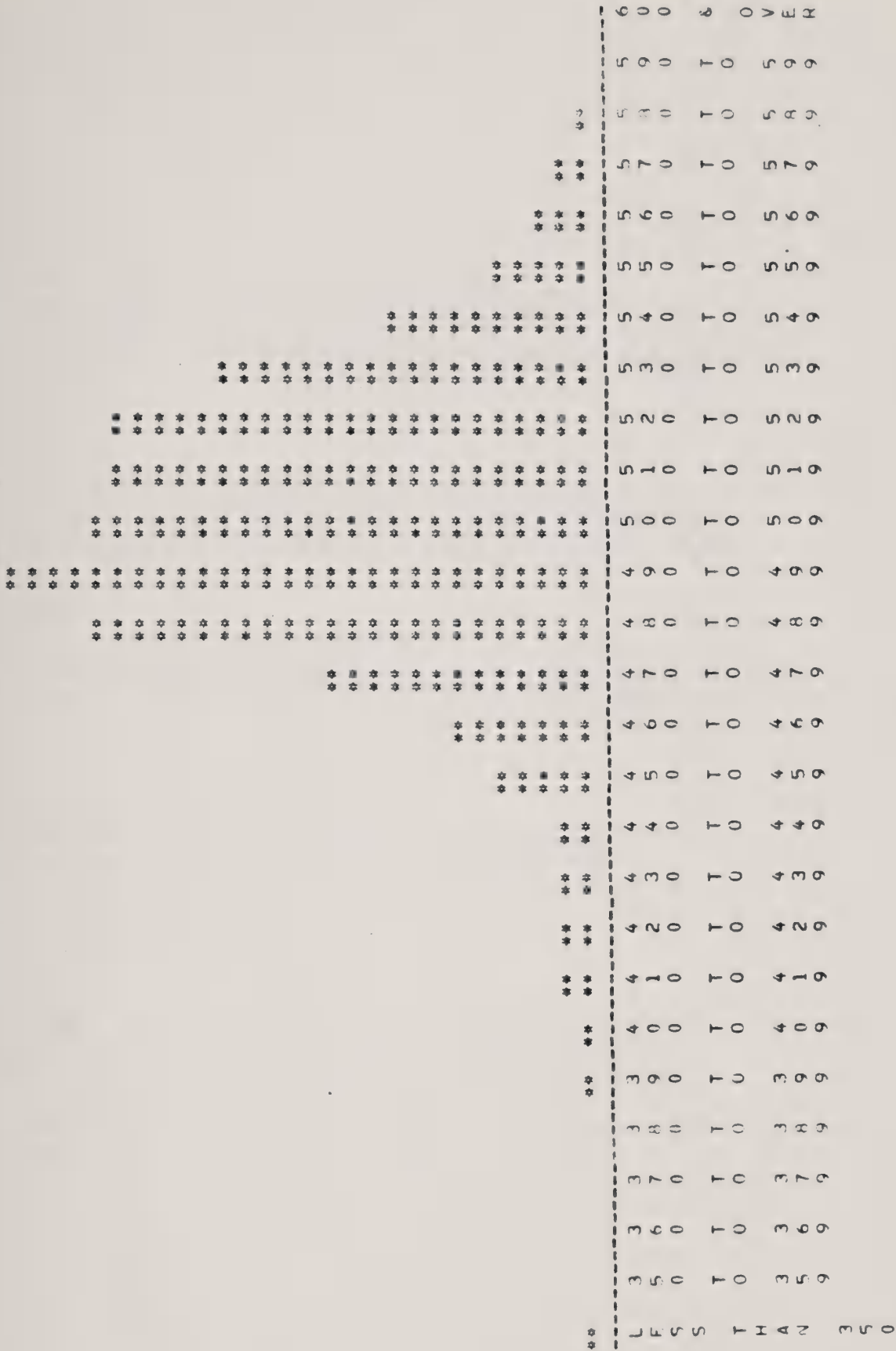
FREQUENCY OF LBS BY YEAR  
STATE=OK YEAR=1978-79

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	4	4	0.226	0.226
360 TO 369	1	5	0.056	0.282
370 TO 379	2	7	0.113	0.395
380 TO 389	2	9	0.113	0.508
390 TO 399	5	14	0.282	0.790
400 TO 409	5	19	0.282	1.072
410 TO 419	12	31	0.677	1.748
420 TO 429	17	48	0.959	2.707
430 TO 439	30	78	1.692	4.399
440 TO 449	13	91	0.733	5.133
450 TO 459	42	133	2.369	7.501
460 TO 469	25	158	1.410	8.911
470 TO 479	46	204	2.594	11.506
480 TO 489	58	262	3.271	14.777
490 TO 499	104	366	5.866	20.643
500 TO 509	167	533	9.419	30.062
510 TO 519	239	772	13.480	43.542
520 TO 529	256	1028	14.439	57.981
530 TO 539	297	1325	16.751	74.732
540 TO 549	191	1516	10.773	85.505
550 TO 559	117	1633	6.599	92.104
560 TO 569	62	1695	3.497	95.601
570 TO 579	44	1739	2.482	98.082
580 TO 589	15	1754	0.846	98.928
590 TO 599	10	1764	0.564	99.492
600 & OVER	6	1770	0.338	99.831
	3	1773	0.169	100.000



PERCENTAGE

14  
12  
10  
8  
6  
4  
2



LBS



FREQUENCY OF LBS BY YEAR  
STATE=OK YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	6	6	0.353	0.353
360 TO 369	2	8	0.118	0.471
370 TO 379	3	11	0.176	0.647
380 TO 389	2	13	0.118	0.765
390 TO 399	4	17	0.235	1.000
400 TO 409	7	24	0.412	1.412
410 TO 419	7	31	0.412	1.824
420 TO 429	16	47	0.941	2.765
430 TO 439	17	64	1.000	3.765
440 TO 449	16	80	0.941	4.706
450 TO 459	21	101	1.235	5.941
460 TO 469	45	146	2.647	8.588
470 TO 479	61	207	3.588	12.176
480 TO 489	111	318	6.529	18.706
490 TO 499	208	526	12.235	30.941
500 TO 509	241	767	14.176	45.118
510 TO 519	205	972	12.059	57.176
520 TO 529	199	1171	11.706	68.882
530 TO 539	196	1367	11.529	80.412
540 TO 549	153	1520	9.000	89.412
550 TO 559	83	1603	4.882	94.294
560 TO 569	42	1645	2.471	96.765
570 TO 579	29	1674	1.706	98.471
580 TO 589	17	1691	1.000	99.471
590 TO 599	7	1698	0.412	99.882
600 & OVER	1	1699	0.059	99.941
	1	1700	0.059	100.000





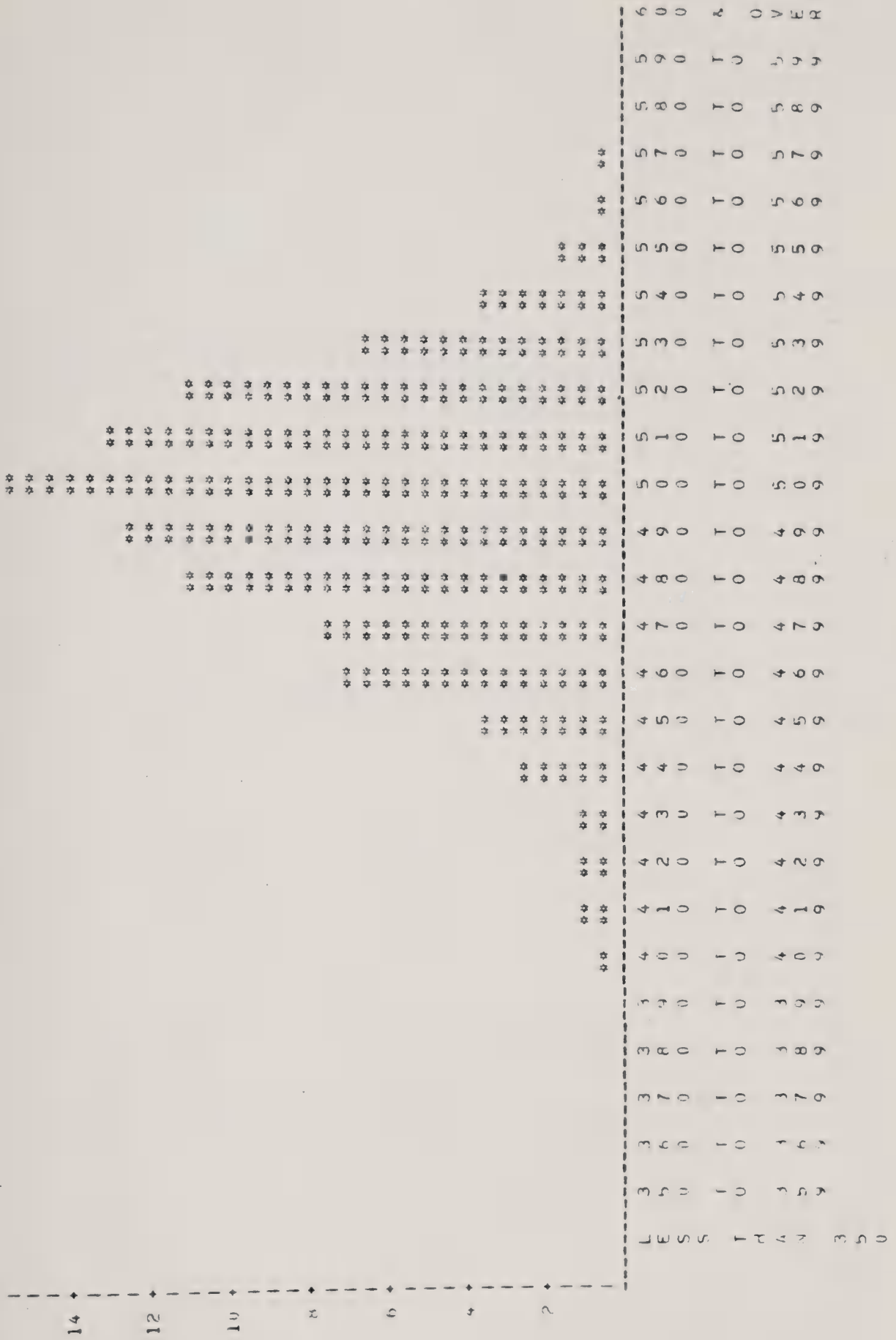
SECTION B-8: cotton bale weights for Texas, histograms and  
frequency tables, 1977-80, 1977/78, 1978/79, 1979/80



COITON BALE WEIGHTS FOR 1977-1980 BY STATE  
STATE=TX

PERCENTAGE BAR CHART

PERCENTAGE





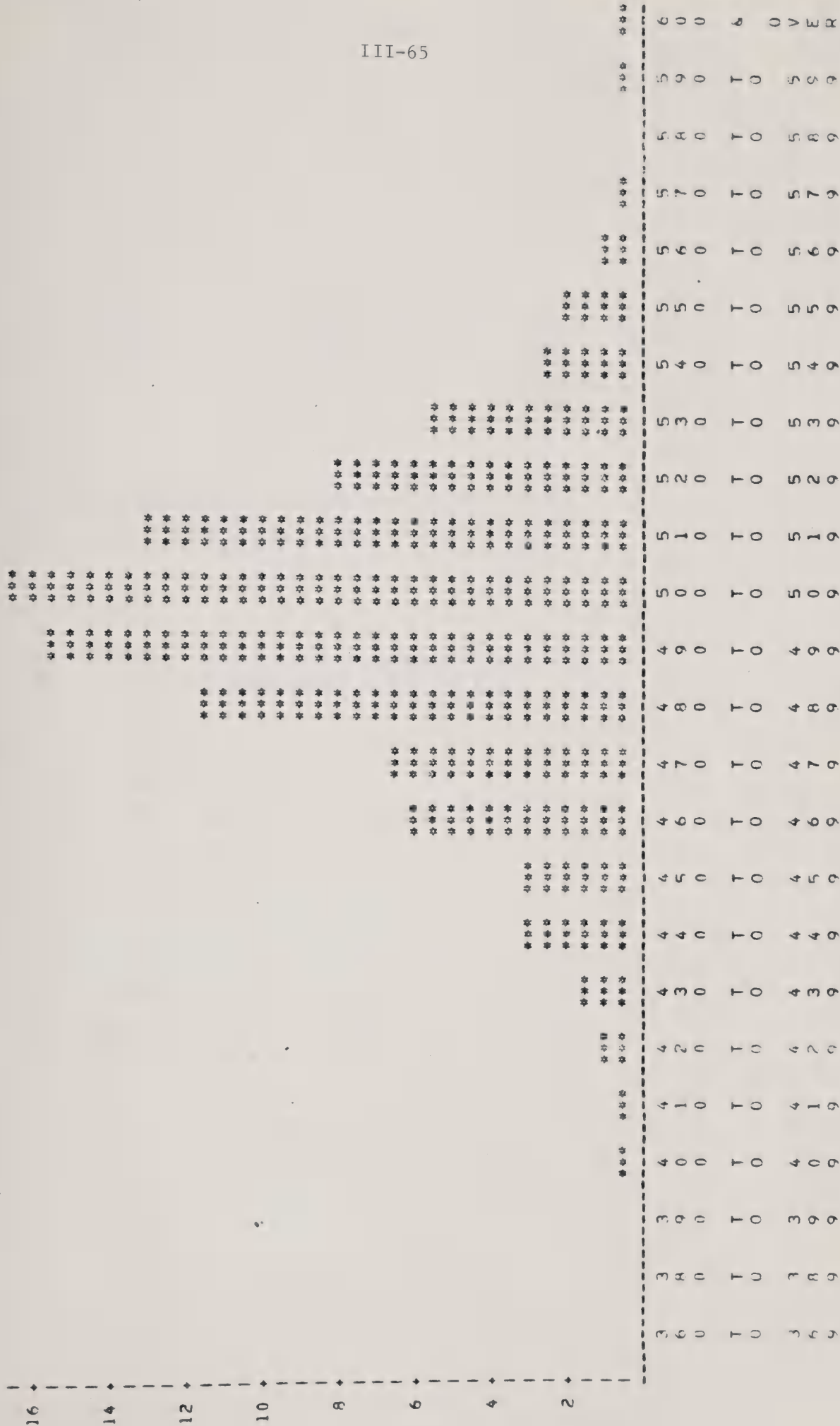
FREQUENCY OF LBS BY STATE  
STATE=TX

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
350 TO 359	2	2	0.075	0.075
360 TO 369	2	4	0.075	0.149
370 TO 379	1	5	0.037	0.187
380 TO 389	2	7	0.075	0.261
390 TO 399	6	13	0.224	0.485
400 TO 409	3	16	0.112	0.597
410 TO 419	15	31	0.560	1.158
420 TO 429	23	54	0.859	2.016
430 TO 439	25	79	0.934	2.950
440 TO 449	25	104	0.934	3.883
450 TO 459	66	170	2.465	6.348
460 TO 469	94	264	3.510	9.858
470 TO 479	187	451	6.983	16.841
480 TO 489	205	656	7.655	24.496
490 TO 499	292	948	10.904	35.400
500 TO 509	331	1279	12.360	47.760
510 TO 519	412	1691	15.385	63.144
520 TO 529	352	2043	13.144	76.288
530 TO 539	294	2337	10.978	87.267
540 TO 549	176	2513	6.572	93.839
550 TO 559	91	2604	3.398	97.237
560 TO 569	38	2642	1.419	98.656
570 TO 579	14	2656	0.523	99.178
580 TO 589	10	2666	0.373	99.552
590 TO 599	3	2669	0.112	99.664
600 & OVER	5	2674	0.187	99.851
	4	2678	0.149	100.000



PERCENTAGE BAR CHART

CENTAGE







FREQUENCY OF LBS BY YEAR  
STATE=TX YEAR=1977-78

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
360 TO 369	1	1	0.116	0.116
370 TO 379	2	3	0.232	0.348
380 TO 389	1	4	0.116	0.465
390 TO 399	5	9	0.581	1.045
400 TO 409	5	14	0.581	1.626
410 TO 419	9	23	1.045	2.671
420 TO 429	11	34	1.278	3.949
430 TO 439	26	60	3.020	6.969
440 TO 449	27	87	3.136	10.105
450 TO 459	50	137	5.807	15.912
460 TO 469	56	193	6.504	22.416
470 TO 479	100	293	11.614	34.030
480 TO 489	135	428	15.679	49.710
490 TO 499	141	569	16.376	66.085
500 TO 509	114	683	13.240	79.326
510 TO 519	71	754	8.246	87.573
520 TO 529	48	802	5.575	93.148
530 TO 539	20	822	2.323	95.470
540 TO 549	18	840	2.091	97.561
550 TO 559	7	847	0.813	98.374
560 TO 569	5	852	0.581	98.955
570 TO 579	2	854	0.232	99.187
580 TO 589	4	858	0.465	99.652
590 TO 599	3	861	0.348	100.000
600 & OVER				



PERCENTAGE BAR CHART

PERCENTAGE

14  
12  
10  
8  
6  
4  
2



LHS



FREQUENCY OF LBS BY YEAR  
STATE=TX YEAR=1978-79

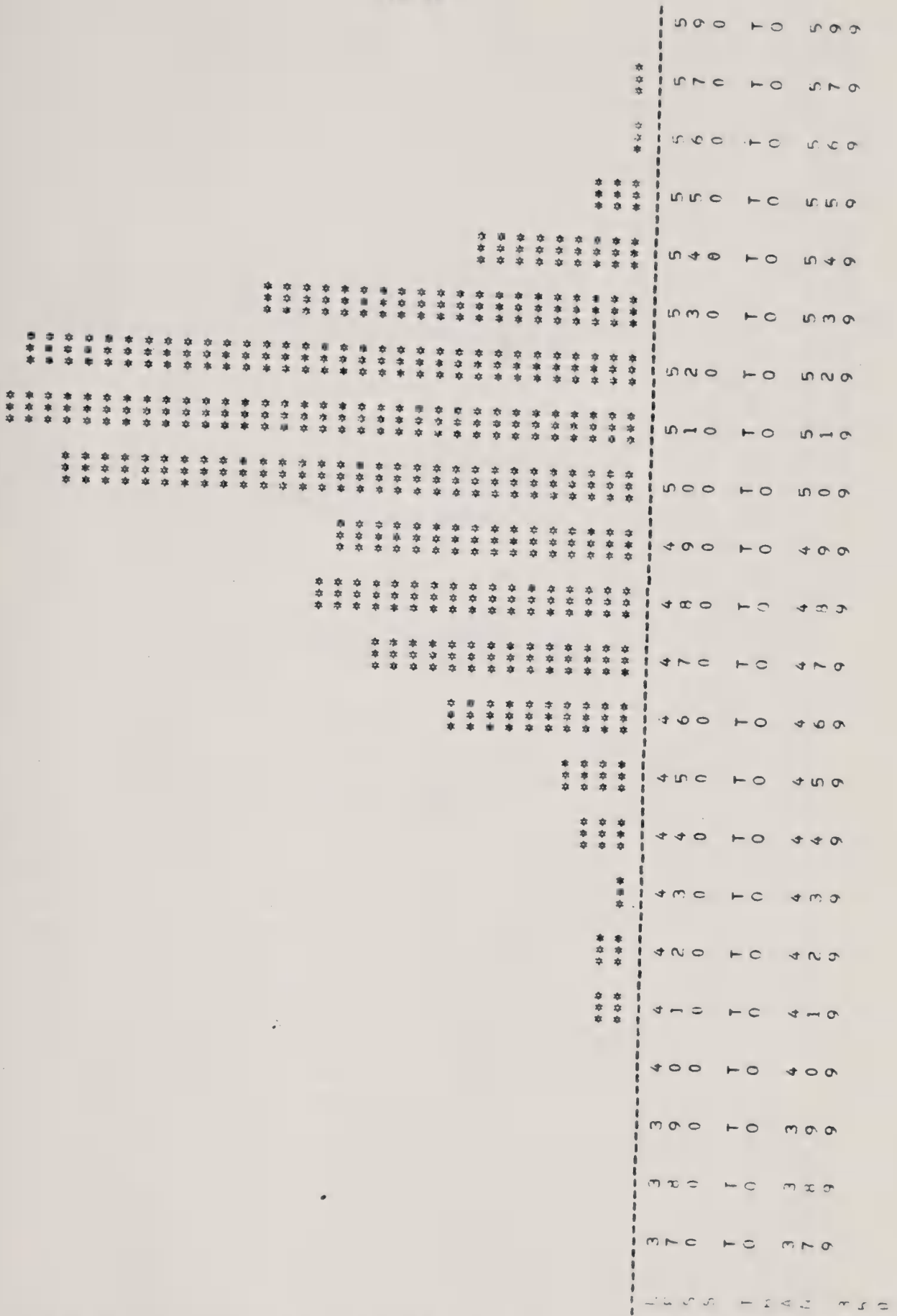
LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350	1	1	0.128	0.128
350 TO 359	2	3	0.256	0.384
360 TO 389	2	5	0.256	0.639
390 TO 399	1	6	0.128	0.767
400 TO 409	8	14	1.023	1.790
410 TO 419	9	23	1.151	2.941
420 TO 429	7	30	0.895	3.836
430 TO 439	9	39	1.151	4.987
440 TO 449	22	61	2.813	7.801
450 TO 459	44	105	5.627	13.427
460 TO 469	86	191	10.997	24.425
470 TO 479	75	266	9.591	34.015
480 TO 489	102	368	13.043	47.059
490 TO 499	112	480	14.322	61.381
500 TO 509	115	595	14.706	76.087
510 TO 519	68	663	8.696	84.783
520 TO 529	56	719	7.161	91.944
530 TO 539	27	746	3.453	95.396
540 TO 549	22	768	2.813	98.210
550 TO 559	6	774	0.767	98.977
560 TO 569	4	778	0.512	99.488
570 TO 579	2	780	0.256	99.744
580 TO 589	1	781	0.128	99.872
600 & OVER	1	782	0.128	100.000



PERCENTAGE BAR CHART

PERCENTAGE

16  
14  
12  
10  
8  
6  
4  
2







FREQUENCY OF LBS BY YEAR  
STATE=IA YEAR=1979-80

LBS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT
LESS THAN 350				
370 TO 379	1	1	0.097	0.097
380 TO 389	2	3	0.193	0.290
390 TO 399	2	5	0.193	0.483
400 TO 409	1	6	0.097	0.580
410 TO 419	2	8	0.193	0.773
420 TO 429	9	17	0.870	1.643
430 TO 439	9	26	0.870	2.512
440 TO 449	5	31	0.483	2.995
450 TO 459	14	49	1.739	4.734
460 TO 469	23	72	2.222	6.957
470 TO 479	51	123	4.928	11.884
480 TO 489	74	197	7.150	19.034
490 TO 499	90	287	8.696	27.729
500 TO 509	84	371	8.116	35.845
510 TO 519	156	527	15.072	50.918
520 TO 529	170	697	16.425	67.343
530 TO 539	167	864	16.135	83.478
540 TO 549	101	965	9.758	93.237
550 TO 559	49	1014	4.734	97.971
560 TO 569	14	1028	1.353	99.324
570 TO 579	3	1031	0.290	99.614
580 TO 589	3	1034	0.290	99.903
590 TO 599	1	1035	0.097	100.000



















